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THE MARINE OBSERVER

A QUARTERLY JOURNAL OF MARITIME METEOROLOGY PREPARED BY THE OBSERVATIONS VOLUNTARY (MARINE) BRANCH OF THE MET. OFFICE

VOL. 68 **No. 340** **APRIL 1998**

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COVER PHOTOGRAPH: A sandstorm approaching vessels in Suez Bay at about 1500 UTC on 2 May 1997 and which shortly afterwards also engulfed the R.R.S. *Charles Darwin* from where the photograph was taken by Mr I. McGill, Chief Engineer. (See page 83.)

Views expressed in this journal are those of authors and not necessarily those of the Editor or of The Met. Office. Copyright remains with the originator. Photographers should ensure that their work is clearly identifiable.

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LONDON: THE STATIONERY OFFICE

Annual Report of the Observations Voluntary (Marine) branch for 1997

1. Voluntary Observing Fleet (VOF)

The UK VOF as a whole constitutes part of the WMO Voluntary Observing Ships scheme which currently comprises about 7,000 of the world's merchant vessels. At the end of 1997 the commercial vessels and other units of the VOF reporting in the SHIP code numbered 483 Selected Ships, 1 Supplementary Ship and 18 Auxiliary vessels. Additionally, there were 53 ships reporting in the MARID code while the offshore sector was represented by 41 rigs and platforms.

The VOF continues to make weather observations at main and synoptic hours or at other times as necessary and its vessels, which undertake the work voluntarily, are equipped by The Met. Office with meteorological instruments loaned for the purpose and are also supplied with relevant stationery as required.

The range of equipment loaned by The Met. Office is related to the class of observing work undertaken. Those ships recruited to work in the 'Selected' category carry a precision aneroid barometer, marine barograph and a marine screen containing dry- and wet-bulb thermometers; for recording sea-water temperature they also carry a sea-water bucket with thermometer or are fitted with distant reading equipment. Those units working in other categories will carry fewer instruments while 'MARID' ships carry the least concentrating on sea-water temperature alone but also making non-instrumental observations of local weather conditions found on coastal passages in northern Europe. Their contribution is vital for the prediction of fog and, in appropriate meteorological conditions, icing. The offshore units provide data from the North Sea oil fields and other areas of exploration in UK waters. Anemometers are not used by the UK VOF, the surface wind speed and direction being estimated from the sea state.

Vessels engaged in all classes of observing are serviced by a team of seven Port Met. Officers (PMOs) based at principal ports around the country, except for offshore units whose Offshore Adviser is based in the Aberdeen Weather Centre. PMOs and the Offshore Adviser regularly visit vessels and installations of the UK VOF to offer advice and to check instruments while the PMOs themselves liaise with counterparts around the world through the Manager of Marine Networks, at Bracknell, so strengthening international co-operation and encouraging more ships to become involved with observing. PMOs also visit ships of other countries' fleets, if required, to assist observing personnel.

Among the many recruits to the UK VOF was the replica of Captain James Cook's *Endeavour*, which was recruited as an Auxiliary observer by the Port Met. Officer for Scotland and Northern Ireland, in July. Several ships were withdrawn from the fleet, the most long-serving being *Canberra*, which surrendered her meteorological instruments to the Port Met. Officer for South-west England in October prior to sailing for the breakers.

The number of meteorological logbooks received in 1997 was 837 compared to last year's total of 853. The logbook data are added to the vast marine databank after a series of computer quality control checks has been completed and the logbooks themselves are then eventually stored as permanent public records in the National Meteorological Archive, at Bracknell.

Observations noted on the Additional Remarks pages of ships' met. logbooks have increased and as many as possible are published in *The Marine Observer*. Reports continue to be copied to relevant experts in the pool of those who

voluntarily give their time and knowledge to comment upon sightings made at sea.

2. Automatic equipment

Following trials of the TURBOWIN system on three VOF ships, 100 lap-top computers were purchased with the aim of loading them with software developed by the Royal Netherlands Meteorological Institute (supplied to The Met. Office free of charge) and replacing MOSS equipment as required. Of the 40 sets of MOSS equipment originally in use, 17 remain operative but these are becoming costly to maintain and will be obsolete by 2000. TURBOWIN is a user friendly system with 200 built-in quality control checks of the meteorological data entered; it allows the automated compilation of ships' observations, their downloading to floppy disks and their subsequent transmission ashore and thence to Bracknell through the use of Inmarsat-C and the Global Telecommunications Network.

3. International and domestic activities

The Marine Superintendent, Captain Stuart M. Norwell attended the Twefth Session of the Commission for Marine Meteorology on 10–20 March. Under the auspices of WMO, on this occasion the venue was the International Conference Centre, Havana, Cuba.

Also during the early months of the year he was greatly involved with the internal reorganisation of parts of the Observations Division of The Met. Office, in which a new branch, Observations Voluntary, was created and which became operational on 1 April. Headed by Captain Norwell, this branch encompasses the original Observations (Marine) branch and also elements of the land-based voluntary and automatic observing network; the two units are now known as Observations Voluntary (Marine) and Observations Voluntary (Land).

Throughout the year, improvements were being made to communication facilities by the installation of e-mail in the headquarters office in Bracknell; the Port Met. Offices will also be linked in due course.

At Southampton, replacing Captain Douglas McWhan who retired in April, Captain James Roe was appointed as Port Met. Officer for South-west England, commencing on 8 September.

4. Publications

Following the 1995 reprint of *Weather Services for Shipping* and the subsequent issue of amendments as required, plans for a new edition of the brochure were put forward, with a publication date expected in 1998.

The January 1997 edition of *The Marine Observer* was inexplicably delayed at the distribution agency normally used and it was decided that, commencing with the April 1997 edition, distribution would be undertaken direct from the Observations Voluntary (Marine) branch. The opportunity was taken to update the postal database, and recipients were requested, via the journal, to provide their latest relevant details. A quantity of copies of the January edition was received from the erstwhile distributors in September and while it is thought that many addressees received their copy of it early in the year, some 250 copies remain at Bracknell. (See *Notices to Marine Observers* on page 90.)

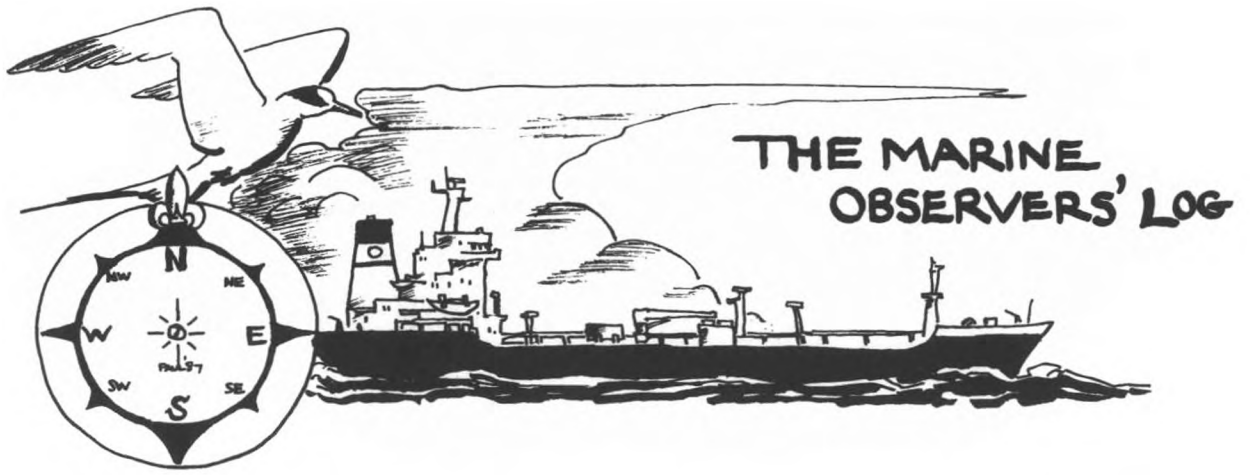
Arrangements were put in hand for the production of a calendar for 1998 for voluntary observers, reflecting the increased scope of the new Observations Voluntary branch. Partly illustrated by contributions from observers at sea, the calendar was ready for distribution by December.

5. General

The annual presentation of barographs to long-serving shipmasters was held at Bracknell on 8 October. At the invitation of Captain Norwell, the presentations for the year 1995 were made by Mr Peter Ewins, the new Chief Executive of The Met. Office, who succeeded Professor Julian Hunt on 1 August.

Following normal practice concerning those with shorter observing careers to date, 300 nominations for Excellent Awards for 1996 were drawn from the names of Masters, Principal Observing Officers and Radio Officers contributing to meteorological logbooks received in that year and the contents of which were assessed as being of the highest quality; the letters of notification were sent at the beginning of August, with the despatch of awards commencing shortly afterwards as nominees responded. The titles selected for this round of awards were: *Collins Atlas of the World* and *Sealife: A Complete Guide to the Marine Environment.* In a departure from previous years, the use of a dictionary as a prize book was suspended.

At the end of 1997 approximately two-thirds of the awards had been processed but responses were still being awaited from the remaining nominees.



April, May, June

The Marine Observers' Log is a quarterly selection of observations of interest and value compiled from the meteorological logbooks of marine observers and from individual reports. Responsibility for each observation rests with the contributor. All temperatures are Celsius unless otherwise stated. The standard international unit for barometric pressure is the hectopascal (hPa) which is numerically equivalent to the millibar (mb).

DEPRESSION

North Atlantic Ocean

m.v. *Chiquita Schweiz*. Captain M. Light. Bremerhaven to Guaranao. Observers: the Master and ship's company.

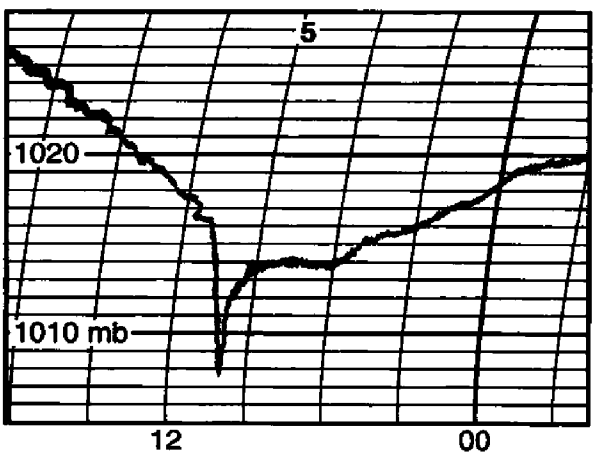
5 May 1997. Since midnight the pressure had been falling slowly, about 0.5 mb every hour, and by breakfast the wind had settled to SE'ly, force 3.

Light intermittent drizzle began at 0930 UTC, giving way to moderate rain at 1000 which ceased at around 1130. By lunchtime the wind had started to freshen while the pressure began to fall a little more quickly, and then it fell very quickly whilst the wind just seemed to come out of nowhere, eventually reaching storm force and veering all the time. The appearance of the sea also changed quite dramatically, from being slight to becoming almost white all over with spray, though with no appreciable height to the waves. Shortly before 1200 an unexpected change of swell from west-by-north to east-south-east was recorded.

The following observations are taken from the ship's Deck and met. logbooks.

Time	Wind		Pressure	Temperature		Remarks
	Dir'n	Force		Air	Wet bulb	
0001	WNW	3	1023.1	15.5	14.5	2 oktas cloud. Swell west-north-west, 3 m, period 6 seconds.
0600	Var.	2	1020.7	17.0	15.0	5 oktas cloud. Rippled sea. Swell west-by-north, 2.5 m, period 8 seconds.
0900	SSE	3	1018.2	17.8	16.5	Overcast. Slight sea. Swell as 0600.
1200	ESE	5	1013.7	17.7	15.1	7 oktas cloud. Moderate sea. Swell east-south-east, 4 m, period 7 seconds.
1300	SSW	10	1007.4	17.0	16.5	Very rough sea. Very good visibility.

At about 1240 the Master remarked that the barograph was broken and that it was a great pity as we would be unable to record this sudden change in the weather. However, having checked both the precision aneroid and the standard aneroid barometers, it was determined that the barograph was fully functional and was indeed recording the event, as the trace indicates.



From 1330 onwards the wind settled to W'ly blowing a strong breeze and the pressure was slowly rising again; the whole event had lasted for no more than two hours. The vessel experienced a short rain shower at 1400 after which the cloud started to dissolve although the wind was still W×S'ly, force 6 and the sea was rough. Weather and sea conditions then continued to moderate.

Weather facsimile charts from NOAA, received via Boston, showed a small depression to the north of the vessel, and which was expected to move south; the observers wondered if indeed this is what they encountered, that is to say the centre of it.

Position of ship at 1300 UTC: 34° 09′ N, 35° 46.5′ W.

SQUALL

Gulf of Guinea

m.v. *Kukawa*. Captain B.N. Jones. Berthed at Takoradi. Observers: the Master and ship's company.

15–16 April 1997. During the day the wind had been blowing steadily S'ly force 3, dying away at around sunset to just light airs. Sheet lightning could be seen in the distance during the evening, and the pressure at 2000 UTC was 1010 mb.

At 2210 the vessel was struck by a violent squall from the north-north-east accompanied by torrential rain, thunder and lightning. The barograph trace showed a vertical pressure rise of 3 mb while the dry-bulb temperature was 27.5° and the wind speed was estimated to be about 50 knots which resulted in difficulty in keeping the vessel alongside. The squall lasted for approximately 20 minutes before the wind started to veer to the east and decrease in strength. By 2300 it was E×N'ly, force 6 decreasing further to force 4 by midnight at which time the pressure was 1011.1 mb. By 0200 the next day, the normal diurnal variation pattern of the barograph trace had resumed.

Position of ship: 04° 53′ N, 01° 45′ W.

WATERSPOUT

Gulf of Guinea

m.v. *London Glory*. Captain M.A. Pearce. At Ima Terminal, Nigeria. Observer: Mr J.H. Donne, 2nd Officer.

20 May 1997. Whilst loading at the SPM a heavy rain shower was observed half a mile away on the port beam; a clearly-defined waterspout was seen emerging from the cloud base, which was at approximately 200–300 feet, and it then descended to reach the sea surface. It lasted for between five and seven minutes during which time it changed its general shape often but remained quite 'tight' throughout. Spray was seen on the sea surface.

At the time the dry-bulb temperature was 28.5° and the wind was SSW'ly, force 3.

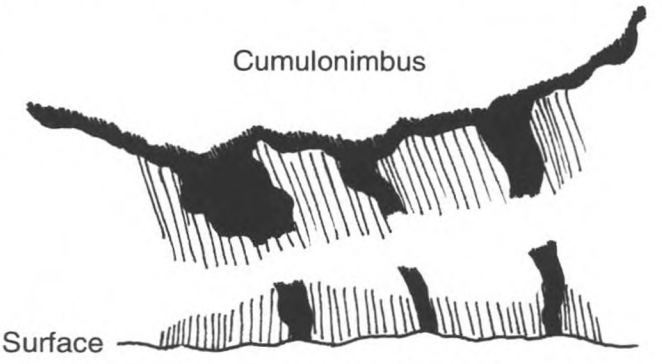
Position of ship: 04° 13′ N, 07° 24′ E.

North Atlantic Ocean

m.v. *Exemplar*. Captain R. Cordon. Sepetiba to Antwerp. Observers: the Master, Mr N. Atkinson, 2nd Officer, Mr K. Taylor, 3rd Officer and members of ship's company.

29 May 1997. During the afternoon, whilst passing between the islands of Gomera and La Palma, in the Canary Islands on a heading of 021°, a developing waterspout was sighted on the starboard bow at a range of approximately 4 n mile.

The spout was developing beneath a dense area of cumulonimbus cloud, leaving it at an angle and breaking in mid-section before reforming to pick up water from the sea surface. The spout appeared to be rotating in an anticlockwise direction, judging from the angle at which it left the cloud, and by the direction of the disturbance at the sea surface. A second and eventually a third waterspout was



seen developing from the same cloud which had a diameter of approximately 3 n mile when measured on the radar. These second and third spouts were less intense than the first one but shared its characteristics, see sketch.

The three spouts eventually dissipated about a mile from the ship. However, when the ship passed at the closest point to where they had been produced, two concentric, elliptical shapes could be seen on the sea surface. These ellipses appeared as areas of 'still' water in a slightly rippled sea. Judging by the size of the ship, the outer one measured approximately 500 m long while the inner one was 75–100 m long, each one being 10–15 m wide.

Weather conditions at the time were: air temperature 19.8°, wet bulb 18.2°, sea 20.5°, pressure 1012.6 mb, wind W'ly, force 2–3. The cloud cover was 6 oktas, mainly cumulonimbus.

Position of ship: 28° 25′ N, 17° 24′ W.

South Atlantic Ocean

m.v. *Toisa Sentinel*. Captain R.T. Blackman. On station, offshore Brazil. Observers: Mr R. Chaplin, Chief Officer and Mr G. Kazimierski, 2nd Officer.

17 May 1997. At 1615 UTC an area of white water in an otherwise calm sea was spotted approximately 500 m away. The broken water moved closer to the vessel and it could be seen that there was water rising into the air, in droplet form, to a height of about 2 m around the periphery of a circle which was about 5 m in diameter. The wind could be seen, by the movement of the water, to be blowing clockwise around a vortex the centre of which was calm. This 'proto-waterspout' passed close to the ship such that the disturbed water area either touched or included the ship. At this stage the formation lost its power to lift water. The wind was ENE'ly while the cloud cover was 8 oktas but there had been no sign of cumulonimbus clouds.

Position of ship: 22° 19.8′ S, 40° 16.7′ W.

CORPOSANTS

Strait of Malacca

m.v. *Newport Bay*. Captain A.C. McCulloch. Jebel Ali to Singapore. Observers: Mrs C.L. Hickin, 3rd Officer and Mr A. Nicholas, SM.

9 April 1997. At 1510 UTC the vessel was on a course of 124° at 22.5 knots when a 'buzzing' sound was heard on the starboard bridge wing. Closer inspection revealed a blue-white plume on the outboard corner of the bridge wing, also on top of the azimuth mirror and the whip aerials; it was also observed on the foremast.

The proximity and frequency of forked lightning at the time of the observation deterred the observers from remaining on the bridge wing for any length of time, or from venturing too far from the bridge-wing doors! The phenomenon lasted for approximately 10 minutes, with no apparent reason for its disappearance.

There had been moderate showers throughout the watch, with occasional thunder, and lightning was heavily in attendance.

The phenomenon was seen sporadically throughout the night, and could be heard but not seen during the following morning. The air temperature was 25.8°, wet bulb 23.8° and the wind was NE'ly, force 3.

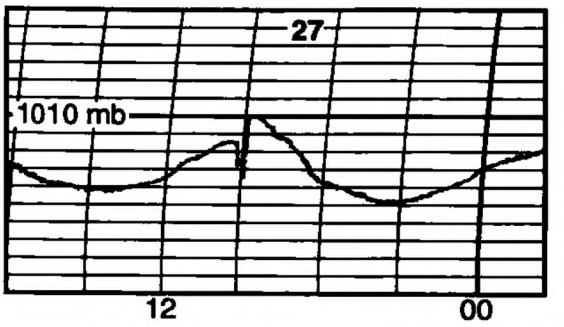
Position of ship: 04° 58′ N, 98° 07′ E.

LOCAL WINDS

Strait of Malacca

m.v. *N.O.L. Steno*. Captain B. Hughan. Singapore to Colombo. Observers: the Master, Mr B. Griffiths, 3rd Officer and Mr B. Fulgencio, AB.

27 June 1997. Up until 1530 UTC the wind had been ESE'ly, force 3 while distant electrical activity had been observed throughout the watch. At 1530 the wind increased instantaneously to SSW'ly, force 5 and rain started to fall very heavily, reducing the visibility to approximately 200 m. The barograph trace shows the sudden changes in pressure associated with the event.

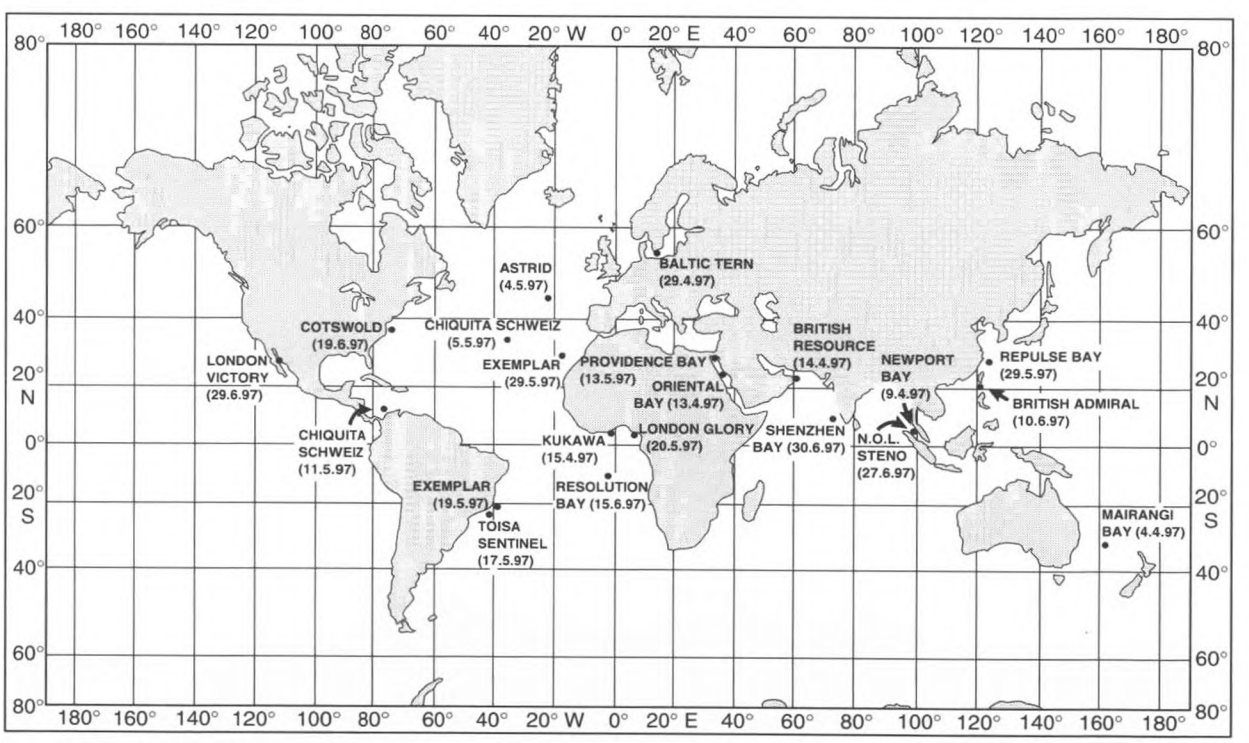


This local storm, or 'sumatra', lasted until 1600 when the wind eased almost as quickly as it had arisen, to SW'ly, force 4, the rain stopped and the visibility improved. The air temperature was 26.5° while the wet-bulb reading was 25.5°.

Position of ship: 04° 27′N, 98° 56′E.

Editor's note. Sumatras occur several times a month in the Strait of Malacca between April and November although they are less frequent at the southern end, in the vicinity of Singapore. They are usually accompanied by a thunderstorm, this signalling their approach and, at the onset, the wind increases in a squall with gusts sometimes well over gale force, quickly followed by torrential rain. There is a sudden fall in temperature at the moment the squall arrives.

The Meteorological Glossary defines a squall as 'a sudden increase of wind speed by at least three stages of the Beaufort Scale, the speed rising to force 6 or more and lasting for at least one minute'. With this in mind, the greater wind speed reported by the observers is a little on the low side for the event to be classed as a true squall. Even so, the overall description broadly agrees with other accounts of sumatras although no mention is made of a change in air temperature as would normally be expected; the observers do not say if the temperatures they recorded were at the beginning, during or at the end of the event.



Position of ships whose reports appear in *The Marine Observers' Log.*

CETACEA

South Atlantic Ocean

m.v. *Resolution Bay*. Captain A.M. Tweedie. Rotterdam to Cape Town. Observers: Mr D.J. Hinson, Chief Officer, Mr P.J. Fowler, Second Officer, Mr J. Prentice, SMS and Mrs Fowler, supernumerary.

15 June 1997. At 0740 UTC the first of two sightings of Bottlenosed Dolphins was made by the Chief Officer and Mr Prentice when a single dolphin was seen rearing vertically out of the water to most of its length of 1.5–2.0 m. It then fell back onto its side, continually repeating these actions.

Later, at 1400 the other observers saw two distinctly separate groups of these dolphins approximately 5–6 cables off the port beam. Travelling in a north-easterly direction the two groups each contained at least 50 individuals and were about 1 cable apart. The ship's course throughout was 142° at 20.5 knots and the wind was SE'ly, force 3–4.

Position of ship at 0740 UTC: 10° 10′ S, 02° 04′ W.

Red Sea

m.v. *Oriental Bay*. Captain A.P. Talbot. Suez Canal to Singapore. Observers: Miss L.M. Butler, 3rd Officer and members of ship's company.

13 April 1997. At 1050 UTC the vessel passed within 50 m of a group of three or four dark-black whales. It was originally thought that they were large dark-coloured dolphins or streamlined pilot whales (the outline of their visible parts is shown in the sketch).

Uniformly dark-black in colour, the whales had very rounded heads and a distinct dorsal fin which was of an average size in relation to the rest of the body. Upon consulting the Eyewitness Handbooks publication *Whales, Dolphins and Porpoises*, it was thought they were False Killer Whales partly because they were seen within the Red Sea. At the time the wind was NW'ly, force 2 and there was a slight and very low south-easterly swell.

Three days later, on the 16th, when the vessel was north of Cape Guardafui, the Third Officer and Mr A.R. Liddell, Cadet, watched a Sperm Whale resting motionless close to the surface, blowing every 10–15 seconds. It was a dark-brown colour and was about 12 m long.

As shown in the sketch, its squarish-shaped head was visible together with the first 'hump' of its back. The whale was facing in the opposite direction to that of the ship, and passed down the port side; at the closest point of approach, the

blowhole could be seen and the foward projecting blow was also distinct. Passing within 150 m of the vessel, the whale remained in the same position until lost from sight.

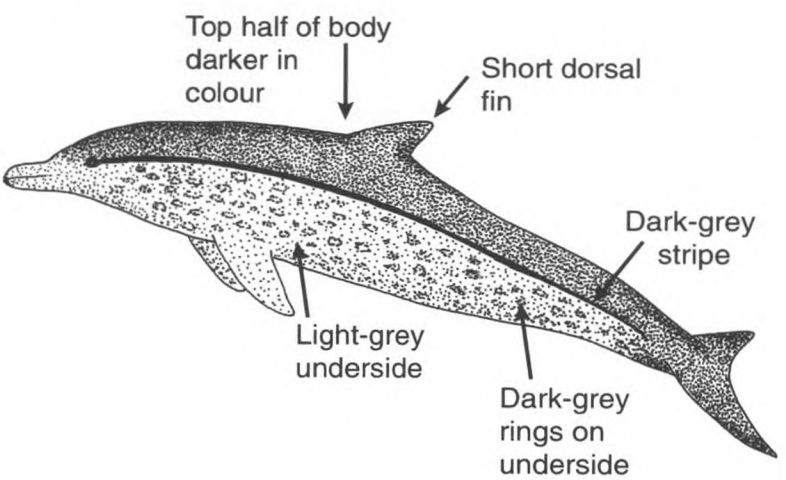
Position of ship on the 13th: 25° 18′ N, 35° 41′ E.

Position of ship on the 16th: 11° 55′ N, 52° 03′ E.

Tasman Sea

m.v. *Mairangi Bay*. Captain B. Nuttall. Sydney to Auckland. Observer: Mr C.W. Longmuir, 3rd Officer.

4 April 1997. At 2130 UTC a school of approximately 14 dolphins (one of which is shown in the sketch) was observed leaping clear of the sea surface. The group swam parallel to the ship's track at a range of about 150 m for roughly 4 minutes before veering off at right-angles to it.



The dolphins appeared to be quite small, their estimated length being about 2 m, and had narrow streamlined bodies. They were grey in colour with lighter undersides apparently mottled with dark-grey rings, while a dark stripe was present along the body running from the eye and extending well down towards the tail.

Position of ship: 34° 10′ S, 161° 49′ E.

BIRDS

Baltic Sea

m.v. *Baltic Tern*. Captain K. Steven. Kiel to Gdynia. Observer: Mr R. Parker, 2nd Officer.

29 April 1997. An early morning 'dawn chorus' was heard around the vessel whilst off Jasmund in reduced visibility. It was noted that there were numerous small birds flying around the containers on deck and, as the light improved, it became obvious that many more had found refuge on deck during the night.

There were at least eight distinct species present; those tentatively identified included: robins (about six in number), wrens, pied wagtails or similar (about 15 cm long, sharp thin beak, black bib, grey top of head and top feathers, long thin black tail) and dunnocks.

Some of the robins seemed to be trying to establish a territory and were inspecting the lock holes of the containers (not very sensible nesting sites if this

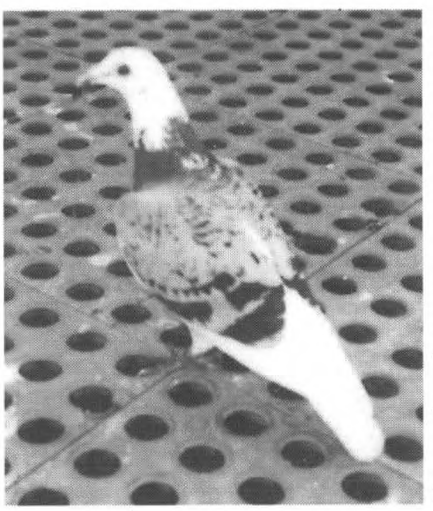
was being contemplated!). The majority of these visitors left the vessel during the day but the robins stayed with it until Gdynia, using the gap between the stacked deck cargo for shelter.

Position of ship: 54° 40.5′ N, 14° 00.7′ E.

North Atlantic Ocean

m.v. *Cotswold*. Captain G. Nicholls. Falmouth to Hampton Roads. Observers: the Master, Mr B.J. Dias, 2nd Officer, Mr E.F. Filiu, GP(1)D and members of ship's company.

9–19 June 1997. On the 9th at about 0800 UTC, while the vessel was coasting off Lizard Point, a pigeon flapped its way to the port bridge wing. Perplexed and lost as we gathered, it started voyaging along with us across the Atlantic Ocean. It was fatted and robust; its neck peculiarly glossed with dark greenish-blues and a tinge of red-coloured feathers. The rest of its body was white and shades of grey and black, as shown in the photograph. Both of its red clawed feet were ringed, inscribed in print 'NEHU. 1995' and '5048'; our interpretation being that NEHU was his name, 1995 his year of birth, and 5048 his number.



Photographer unknown

'Nehu' on 16 June 1997

Well, Nehu had no significant intention of leaving the ship and hence we started feeding him. His diet mainly consisted of lentil seeds which he relished though we also gave him rice and wheat flakes. For the first couple of days he slept in the wheelhouse at night and would then gallivant about the bridge wings during the day. Then for some reason he decided to stay night and day on the wings for a few days despite our much enforced persuasion to do otherwise. Once, he also braved out rough weather of winds of force 8 and heavy rain. He came to be regarded with much fondness as his 'immunity' to the bridge increased,

On 17 June at about 1400, Nehu mustered his courage and circled around the ship and across the funnel a couple of times before homing in on the starboard bridge wing where he rested. The next day, the vessel anchored at Lynn Haven, 2 n mile from the nearest land but Nehu had become quite lethargic after his nine-day voyage.

Finally, on the 19th at 0230 during the dawn hours our good friend Nehu decided to flap himself away. We all hoped he found a much better place to rest.

Position of ship on the 19th: 36° 58′ N, 76° 01.5′ W.

Indian Ocean

m.v. *Shenzhen Bay*. Captain D.W. Lax. Jebel Ali to Singapore. Observers: Mr R. Wood, Chief Officer and Mr G. Wood, SMS.

30 June 1997. At 0100 UTC whilst the 4–8 watchkeeper was doing his daily chores around the bridge area he stumbled across two birds which looked rather sodden and forlorn. Seemingly one adult and one youngster, they were first given some shelter on the port bridge wing, and were later moved to the wheelhouse where they were housed in cardboard boxes until they dried out. During the rest of that morning another five birds were found and similarly treated.

The adult bird was 25–30 cm long and had a brown upper side with a white underside; its face was brown with a band of white past the eye, over the top of the beak and back down the other side of the head. Its beak was long, sharp and brown. The youngster was a lighter shade of brown all over but had the same sort of beak and some white showing on its mantle. After much cogitation, the observers believed the birds to belong to the shearwater family. Having passed through the Amindivi and Cannanore Island groups in the night, it was assumed that they had been blown onto the ship from there. They were all released in the afternoon, about six hours after being found, and all happily flew off eastwards towards India.

The ship was about 67 n mile west of Cochin, the wind was W×N'ly, force 6 and there had been torrential rain throughout the night.

Position of ship: 09° 47′ N, 75° 07′ E.

Arabian Sea

m.v. *British Resource*. Captain G.M. Hallett. Al Bakir to Aruba. Observers: Mr T. Ruttledge, 3rd Officer and Mr R. Hodgson, Cadet.

14 April 1997. At 0730 UTC three colourful birds were observed perching on the aerial spanning the samson posts. The colour of the underside of the birds' bodies was turquoise-blue while their backs were terracotta-red and there was a dark stripe running from the base of the beak , through the eye towards the back of the head. They were about the size of a pigeon but with a longer wing span (30–40 cm) and they had longer tail feathers; their legs were about 10 cm long. In flight, the undersides of the wings were blue to black, and the upper sides were red to white to blue to black.

The birds generally appeared 'kingfisher type' from a distance but when viewed more closely, two of them, having smaller beaks, seemed more like the shape and size of a Collared Dove but with broader wings. The remaining bird, with a broader bill, retained its kingfisher appearance but was not startlingly different from the others.

Whilst perching, the birds would sometimes lift up their heads together and then fly at each other, as if fighting, before settling down again; occasionally one would take a short flight and then return to the perch.

Position of ship: 22° 04′ N, 60° 20′ E.

Caribbean Sea

m.v. *Chiquita Schweiz*. Captain M. Light. Guaranao to Almirante. Observers: the Master, Mr H.S. Wright, Chief Officer, Mr B. De Celis, 3rd Officer and Mrs Wright, supernumerary.

11 May 1997. At 2215 UTC a bird was observed flying circuits around the vessel. It caused particular interest as it was not the normal 'run of the mill' seabird. After several circuits, it flew across the deck and forward, perching on the foremast platform rails, some 130 m away, with its back to the observers.

The bird was studied closely through binoculars, and was noted to be a small bird of prey but no precise identification was possible due to a lack of literature on board. Standing about 25 cm high from head to talon (when compared with the spacing of rungs on the foremast ladder) its colouring was predominantly dark, having very dark wings and shoulders but with a whitish throat and legs.

After about 20 minutes perched on the rails it hopped onto a rung of the foremast top ladder which was sheltered from the relative head wind, and appeared to be settling down for the night. Shortly after dawn the next morning the bird was conspicuous by its absence.

At the time of the bird's arrival the vessel was approximately 80 n mile north-west of Cartagena. The wind was ENE'ly, force 2 and the weather was mainly cloudy.

Position of ship: 11° 06′ N, 76° 45.5′ W.

BIOLUMINESCENCE

Pacific Ocean

m.v. *Repulse Bay*. Captain K.P. Byrne. Busan to Kaohsiung. Observers: Mr A.M. Jameson, 3rd Officer and Mr R. Pearce, SM1.

29 May 1997. At 1430 UTC whilst on passage from South Korea to Taiwan, a very strong luminescent-green glow was observed in the bow wave and also in the wake of the vessel. Additionally, several areas of luminescence approximately 100 m in diameter could be seen at a distance of about 0.5 n mile on both sides of the vessel.

At the time, the vessel was passing through a large fishing fleet although there were no craft in close proximity to the luminescent areas. The phenomenon was observed for about 10 minutes before dying out.

The cloud cover during the observation was 6 oktas, the sea temperature was 22.9° and the wind was NE'ly, force 4.

Position of ship: 28° 53′ N, 123° 53′ E.

EXCEPTIONAL VISIBILITY

Red Sea

m.v. *Providence Bay*. Captain R.A. Kenchington. Jeddah to Le Havre. Observers: Mr N.A. Voss, 3rd Officer, Mr G. Webb, SM1 and Mrs Voss.

13 May 1997. At 1742 UTC the vessel was on passage in the northern part of the Red Sea. A very hot and dry following wind was being noted when, astern, the light on El Akhawein (The Brothers) was seen. El Akhawein Lighthouse (position

26° 18.8′ N, 34° 50.5′ E) has a height of 36 m, a nominal range of 17 n mile and an extreme range of 24 n mile, given the observers' height of eye of 31 m. The light was clearly visible without binoculars at a range of 34.5 n mile. A few minutes later, however, it had completely disappeared.

By 1900 the wind, which had been blowing SE'ly, force 7, had died away to zephyrs and, on entering the Straits of Gubal at about 2000, a fresh NW'ly breeze was noted.

Weather conditions at the time were: air temperature 35.0°, wet bulb 23.6°, sea 25.1 °, pressure 1008.4 mb.

Position of ship at 1742 UTC: 26° 51.5′ N, 34° 39.6′ E.

RAINBOW

South Atlantic Ocean

m.v. *Exemplar*. Captain R. Cordon. Sepetiba to Antwerp. Observers: Mr N. Atkinson, 2nd Officer and Mr V. Valencia, SG1.

19 May 1997. At 0445 UTC a lunar rainbow was observed in a perfect formation. It appeared to be elongated over an arc of approximately 70° at low altitude of 10°–15°, and seemed to be constructed of three distinct and separate bands. The top third was almost red in colour and was followed by a middle section which was dark-grey, and then there was a third section of a silvery-white colour. The moon was at an altitude of 21° on a bearing of 271°, and was 91 per cent full.

At the time of observation the weather conditions were: air temperature 23.5°, wet bulb 22.0°, wind ENE'ly, force 3, and the cloud cover was 4 oktas of cumulus and cumulonimbus.

Position of ship: 21° 05′ S, 39° 43′ W.

GREEN FLASH

Gulf of California

m.v. *London Victory*. Captain R. Fullagar. At anchor off La Libertad. Observers: the Master, Mr C. McCullough, Chief Officer, Mr A. Frost, 2nd Officer, Mr M. Roberts, 3rd Officer, members of ship's company and supernumeraries.

29 and 30 June 1997. On the evening of the 29th, in perfect observing conditions of clear skies, calm seas and good visibility, the sunset was eagerly watched for the 'green flash' phenomenon. Afterwards, out of all those gathered, only the Mexican pilot reckoned to have seen it.

On the next evening however, the Second Officer definitely saw the sun change to a greenish-turquoise colour as it vanished over the horizon — describing it as a case of "blink and you've missed it". The claims of both sightings were met with many and varied comments but on each occasion everyone agreed that they saw the sun change shape as it set, and that it appeared to 'pour' over the horizon.

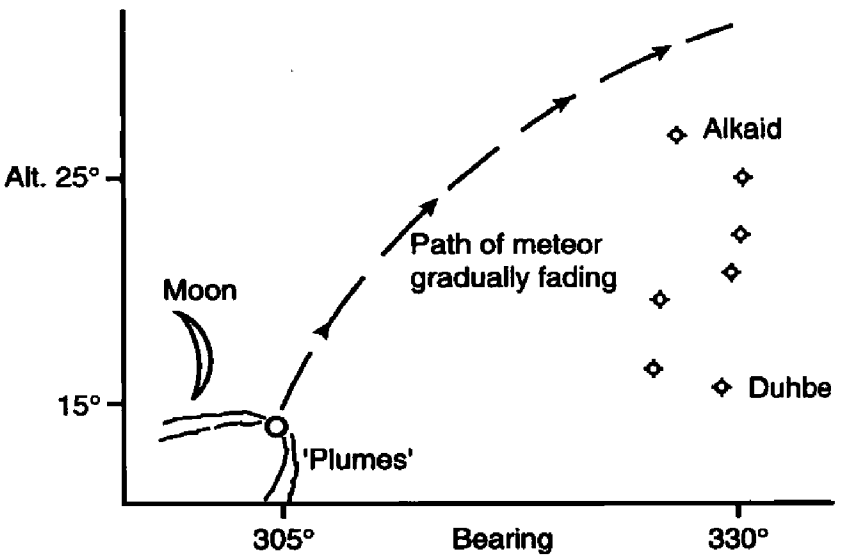
Position of ship: 29° 51′ N, 112° 43′ W.

METEOR

South China Sea

m.v. *British Admiral.* Captain R. Standing. Kaohsiung to Kawasaki. Observers: Mr S. Magalotti, 3rd Officer and Mr N. Hamo, Watchkeeper.

10 June 1997. At 1210 UTC whilst on a course of 074° at 14.5 knots, a bright-white meteor was seen, as shown in the diagram.



It was first spotted at an approximate declination of 15° on a bearing of 305°, starting off just south-east of the moon and travelling in a roughly circular path until it faded out just north of Alkaid, on a bearing of 330°. Its body was bright-white with long whitish 'plumes' on either side which were presumed to be vapour trails of some kind. It travelled at a much slower speed that any 'shooting star' seen so far, to the extent that the observer had time to call the Officers' Bar to see it anyone wanted to observe it too.

Position of ship: approximately 21° 36′ N, 120° 48′ E.

UNIDENTIFIED LIGHT

North Atlantic Ocean

s.t.s. *Astrid.* Captain G. Ulrich. The Azores to Dartmouth. Observers: Mr D. Hawker, 2nd Officer and Mr P. Compton, Watchkeeper.

4 May 1997. At 0443 UTC a light was sighted high in the sky above the ship. The light was of the style of a satellite in appearance. However, it was seen for about 10–15 seconds moving west to north-west, with a pulsating white light. In addition, it was moving very fast and it also stopped dead a couple of times.

At one point, the light stopped and turned in the direction of the ship. The light no longer pulsated, and for about one second it was in the form of a spotlight lighting the surrounding area. This light then turned back again and moved very, very fast across the sky before it was lost below the horizon in a matter of seconds. The ship's course was 019° at 6.5 knots.

Position of ship: 43° 22.14′ N, 21° 53.6′ W.

MISCELLANY ...

An additional mélange of maritime sightings

Bransfield. 27 April 1997. Whilst on passage from Montevideo to Grimsby in position 21° 38′ S, 22° 02′ W, at 1100 UTC, Las Palmas Radio could be heard clearly on VHF Channel 16, at a range of 531 n mile. At the time the air temperature was 21.8°, wet bulb 20.0°, sea 22.5° and the pressure was 1017.5 mb.

C.S. Nexus. 1 May 1997. During cable-laying operations in position 30° 57′ N, 131° 50′ E a shoal of fish was seen swimming just under the starboard bow. They were very close to the surface and appeared to have blue-purple colouring. The Japanese fish representative on board believed they were probably a species of tuna.

European Shearwater. 14 June 1997. Whilst the vessel was in St George's Channel *en route* from Dunkirk to Barrow, Third Officer B. Worthington noted the blows of two whales at 0730 UTC; they were about 3 cables away and were heading south. Visible for only two minutes, they could not be identified.

Maersk Gannet. 30 April 1997. At 0855 UTC Captain M. Brocklesby, Extra Master W. Londesborough and Third Officer A.R. Langford sighted a pod of about 18 pilot whales travelling north-east in a tight group. The whales were 3–5 m long, black with notably raked dorsal fins. They moved through the water with a smooth 'barrelling' motion, passing the vessel which was stopped for maintenance in position 10° 27.2′ N, 17° 54.2′ W.

Moreton Bay. 22 April 1997. Having just cleared Rondo Island and the Strait of Malacca, Captain P.R. Kaye and Third Officer B. Tucker noted a strong tidal shear line running 190°/010°. It consisted of one main 'river' of north-flowing current (2–3 knots) about 50 m wide flanked by alternating bands of calm water and less well-defined shear lines.

Putford Ajax. 16 June 1997. Whilst on station in the North Sea, the vessel was visited by a Minke Whale about 6 m long. Second Officer I. R. Buley noted that it stayed in the area all day, and was often alongside.

Shenzhen Bay. 4 May 1997. A single Sperm Whale was spotted by Third Officer J. Geddes when the ship was in position 09° 32.6′ N, 75° 21.6′ E. It was easily identified by the angled blow and blunt head. Four more Sperm Whales were seen on 23 May by Mr Geddes and First Officer M. Willis.

Seki Cedar. 4 April 1997. At 1855 UTC in position 37° 14.6′ N, 09° 21.2′ W a small brown turtle was sighted 6 m from the port side of the vessel, swimming in same direction as ship's course (164°). The turtle was approx. 35 cm long and definitely brown, and allowed a brief sighting before the wash obscured it. The sighting was a North Atlantic 'first' for the observer.

(*Editor's note.* Mr Neil Fletcher, English Nature's European Marine Sites Project Officer for Morecambe Bay, said, "The sighting was probably of a juvenile Loggerhead turtle, a species which is frequently seen in this locality. The major nesting areas for Loggerheads in the Atlantic are mainly around Florida and the Gulf of Mexico, with some minor nesting off the coast of Morocco. It is thought

that the newly emerged hatchlings scramble off the Florida beaches into the sea and then head straight into the Gulf Stream which carries them across the Atlantic. Some drift as far north as the cool waters of the British Isles whilst the majority leave the Gulf Stream and move into the Canary Current which carries them past the Azores, the Portuguese coast and Madeira. Loggerhead turtles are frequently sighted in these areas and are still hunted for their shells, which are sold to visiting tourists.)

Taunton. 18 May 1997. The active volcano Gunung Api, on the island of Sangeang (Indonesia), was observed in eruption by Second Officer R.T. Mattos and C. Osias, AB. Watched at 0200 (ship's time) the top of the volcano looked like hot burning embers while red-hot lava streams were seen on the sides.

Trade Maple. 2 May 1997. A Hoopoe was sighted on board in position 08°N, 65° E.

Vigilant. 7 June 1997. At 0840 UTC whilst the vessel was on patrol to the north-west of the Butt of Lewis, it was visited by a dove of the Collared variety which appeared to be in transit. Captain D.L. Beveridge and Second Officer C. Taylor did not see any man-made identifying tags on the bird.

... and finally

Wherever possible we endeavour to print observers' sightings together with full expert comment and analysis. Should our production schedule preclude this, then we will publish comments retrospectively, referring readers to the appropriate edition of *The Marine Observer*.

ISSUE	PAGE	SHIP	COMMENTS
October 1997	164	*Leonia*	Captain M.K. Barritt, of the RNBWS confirmed the identity of a Pomarine Skua.
October 1997	165	*Ormond*	Source as above. Baillon's Crake (*Porzana pusilla*). "The Russian race of this species is a common winter visitor to the area. Usually seen singly. Habitat: flooded meadows."
October 1997	165	*Peninsular Bay*	Source as above. Black-eared Wheatear (*Oenanthe hispanica*)."The winter migration of this species takes it to the semi-desert and savannah belt in northern tropical Africa, from Senegal to Ethiopia. Cap Bon may well be a landfall for this migration."
January 1998	14	*Maersk Stafford*	Dr R. White, of the Institute of Research in Meteorological Optics. "This seems to be in pretty much the position that part of a rainbow should be, and also has pretty much the correct orientation and order of coloured bands. My first thought was that this might be a band of rain falling towards the sea but I then realized that a shaft of sunlight shining through a gap in the clouds (in effect, an anti-crepuscular ray) would give this nearly enough (apart from the colour blocks not quite rectangular, rather parallelograms). Cloud movement would then account for the way the band sank. Even if the observers mean 'moved along its length' by 'pushed', this could surely have been mistaken unless bearings were taken repeatedly. There is one difficulty, however, that I cannot resolve to my satisfaction, which is that the spectrum is far too long, more than 8° when about 1° is expected."

SCENE AT SEA

C. Andrews

The island of St Kilda on the afternoon of 11 May 1997 photographed from f.p.v. Vigilant, and showing an example of orographic cloud. Captain D.L. Beveridge said, "Up to the time the photograph was taken, the sky had been partially covered with a layer of stratocumulus which then gradually became more developed as the afternoon wore on, to become totally overcast by the 1800 synoptic hour."

C. Andrews

A visitor which boarded f.p.v. *Vigilant* on 12 May 1997, in position 59° 00 N, 07° 30′ W. It stayed on board for about half a day before resuming its passage. It was believed by Captain D.L. Beveridge and the ship's company that the bird was a Northern Wheatear on summer migration.

SCENE AT SEA (*contd*)

C.D. Mercer

C.D. Mercer

During the arrival of the *Shenzhen Bay* at Jebel Ali on 30 April 1997, the moth shown in the photographs was discovered clinging to the bottom of a container above the mooring deck. Seaman Mr C. Mercer and his colleagues agreed that the moth measured about 80 mm across its wings, possibly more. It was still there upon the vessel's departure the next day, so the lower photograph showing the markings on its underside was taken. Later, after consulting a reference book, Mr Mercer identified the passenger as an Oleander Hawkmoth.

Editor's note. According to our reference *A Field Guide in Colour to Butterflies and Moths,* (published by Octopus Books Limited), this moth is widely distributed in southern Europe, Africa, Asia Minor and India, also occurring regularly in the United Kingdom. The large and impressive caterpillars have a little horn at the posterior, and the adult moths are immaculately coloured — excellent subjects for photography.

Captain J.B. Nichols

Above: Male Snow Bunting, in full summer plumage, after it arrived on f.r.v. *Scotia* at 1600 UTC on 25 April 1997. The vessel was on the eastern side of the Shetland Islands, and NE'ly gales had been experienced the previous day although when the bird arrived the wind was force 2 and there was bright sunshine. The bunting was given fresh water and fed with wild bird seed (busy eating when photographed) before it departed towards Shetland an hour later.

Below: A small flock of about 20 Meadow Pipits arrived on f.r.v. *Scotia* overnight on 29 April 1997 while the vessel was off the Moray Firth. Weather conditions were: wind SSE'ly, force 4–5 with rain and fog, also moderate seas. Captain J.B. Nichols said, "It was thought the birds would continue their migration once the visibility improved but all remained on board and died within 24 hours, including the one I photographed in my cabin during futile efforts to revive it."

Captain J.B. Nichols

10,000 Leagues Under the Sea: The BRIDGE Programme*

By Keith Harrison

(Programme Manager of the Natural Environment Research Council's *British Mid-Ocean Ridge Initiative*)

The Earth's surface tears apart; lava erupts; toxic fluids hotter than molten lead gush from the rocks. Beneath the palls of black smoke and the rain of sulphide dust, creatures jostle in the permanent night. Danté's Inferno? Armageddon? No, just another Monday on the mid-ocean ridge.

Introduction

In the depths of the world's oceans, under several kilometres of water, lies a chain of actively volcanic mountain ranges, the mid-ocean ridge. Rising to heights of more than 3,000 metres above the surrounding sea floor — as high as the Pyrenees — this continuous mountain chain wanders unseen for 50,000 kilometres through every ocean in the world, like the seam on a giant tennis ball.

The British Mid-Ocean Ridge Initiative (BRIDGE) is an £11 million NERC programme investigating the geology, chemistry and biology of this mid-ocean ridge. First funded in 1993, BRIDGE has assembled an unprecedented community of researchers from diverse branches of science and technology to address the technical and scientific questions posed by this most challenging of environments.

The largest crumple zone in the world

Possibly the most geologically active region on Earth, the mid-ocean ridge marks the site of profound cracks in the Earth's crust. Lava from the white-hot regions below flows up these cracks, meets the cold deep ocean water and solidifies, producing new sea floor. As the cracks open and seal, again and again, along the same volcanic lines, the newly formed sea bed is carried in both directions away from the ridge crest as if on two huge conveyor belts running back to back. All ocean floors — two-thirds of the surface of the Earth — were formed in this way at the mid-ocean ridge. On a planetary scale, continents appear to drift on the Earth's surface as the ocean floor between them expands. It was seafloor spreading that sent the island of India slamming into the south coast of Asia, throwing up the Himalayas: the largest crash crumple zone in the world. This mangled continental wreckage buckling skywards has disrupted global wind patterns and changed the climate of the entire planet. That this has happened in extreme slow-motion does not detract from its spectacular and far reaching consequences.

In the more sedate mid-Atlantic, from the Arctic to the Antarctic, the creation of new ocean crust pushes Europe away from North America, and Africa from South America, at about the same speed as your fingernails grow. In the north Atlantic

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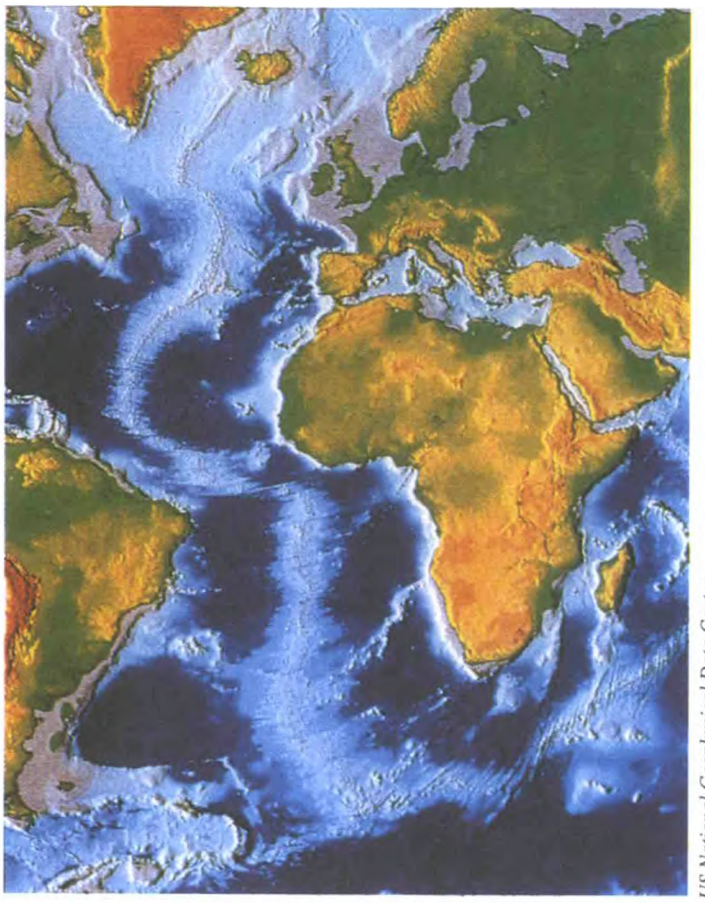
* Reproduced from *NERC News*, Winter 1996 by kind permission of the Editor.

BRIDGE is a thematic programme of the Natural Environment Research Council. It is one of a number of national research programmes investigating the mid-ocean ridge. International collaboration is effected through the InterRidge Programme. The UK currently hosts the InterRidge Office, which is funded by the NERC via BRIDGE. To receive information about the BRIDGE Programme please contact Keith Harrison at the BRIDGE Office, Department of Earth Sciences, University of Leeds, Leeds LS2 9JT, UK; tel: 0113 233 5241, fax: 0113 233 5259, email: BRIDGE@earth.leeds.ac.uk.



US National Geophysical Data Center

The mid-Atlantic ridge: a giant oceanic backbone.

the top of the ridge protrudes through the sea's surface as a vast volcanic island, Iceland. Straddling the ridge crest, with its east coast moving east and its west coast moving west, Iceland is still growing at a rate of two centimetres every year and its volcanoes and hot springs are echoed in its still submarine neighbours curving thousands of kilometres to the south, for all the world like a gigantic oceanic back-bone.

Studying the ridge

The difficulties of studying such an active region at such great ocean depths cannot be overstated. Equipment must be positioned accurately while suspended on the end of four kilometres or more of cable. Modern researchers, and the engineers who design and build their equipment, must be prepared for pressures of 300–400 times the pressure at sea level — more than a third of a tonne on every square centimetre. If investigators are to visit the ridge in person (and they do) they must be encased in a titanium sphere with walls 10 centimetres thick.

From the outset, the BRIDGE programme adopted a focused approach to understanding the ridge. First a small number of geographical regions were selected for mapping by long-range sonar. Smaller areas within these mapped sections were then studied in greater detail and their geological structure was analysed. The stresses and strains in the Earth's crust as the ocean floor is torn apart by forces from below (which are still not fully understood) and the buckling and faulting of the ridge that result are an important aspect of study within BRIDGE. So too is an attempt to understand the magnetic, structural and chemical properties of the newly created rock itself. These are being investigated in the field

from NERC research vessels and in the laboratory at a number of UK universities and research institutes. But as fundamentally important to the structure of the planet as the mid-ocean ridge is, it is not only its crust-building activity that has attracted attention.

Underwater fire-hoses

The lava that rises from beneath the crust is at temperatures of 1100 °C. The sea water in the deep ocean is at 2–4 °C. The rapid cooling of the molten rock as it solidifies on contact with the water leaves it shattered and cracked. As this new sea floor moves away from the ridge crest water seeps down these fractures into the sea bed and is heated by the molten rock deep in the crust. As it is heated, minerals dissolve from the rock into the hot water-filled spaces producing a saturated superheated solution of metallic salts. At intervals along the ridge these superheated toxic solutions are vented from the sea bed as if from the nozzles of underwater fire-hoses. Mineral laden water at temperatures up to 400 °C is fired into the overlying ocean. Hitting the cold oceanic water, the minerals are forced out of solution. Some solidify around the mouth of the vent, building cylindrical mineral chimneys more than half a metre wide and up to 18 metres high. The rest precipitate in the water producing a black 'smoke' of sulphide salts which rises into the ocean like the black plume from an industrial smelter and rains particles onto the surrounding sea floor. This precipitation of minerals at a group of vents (a 'vent field') can produce a mound of metal-rich deposits the size of a cathedral. And on the surface of these mounds, amidst the high temperature chemical soup, lives one of the most unexpected biological communities on Earth.

Fabulous creatures

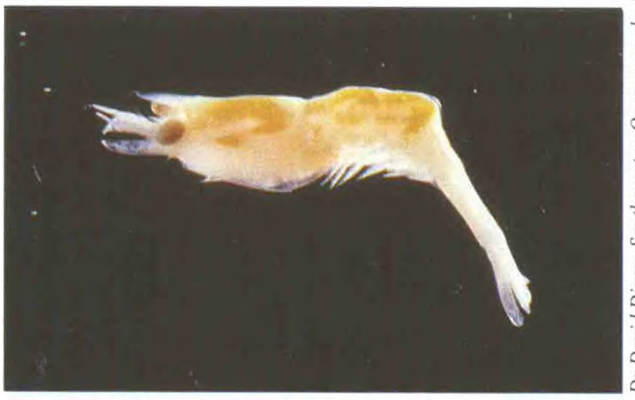
Until recently, biology text books said that all life on Earth depends ultimately on energy from the sun. We now know this is not true. Around hydrothermal vents the sun never shines. There are no plants. Photosynthesis is not the basis of life here. It is the energy from the chemical reactions in the vents that drives the biology. The living base of the energy web around the vents is bacteria — bacteria that can take the chemical energy from the high temperature reactions and, with the chemicals from the water, convert it into living tissue. Dense communities of animals live around the vents. In the Atlantic these communities are dominated by huge numbers of shrimp and by sea anemones. Some species of animal appear to incorporate bacteria into their bodies and extract energy directly from this intimate relationship; some may feed on the bacteria. No-one is yet certain exactly how the bacteria fit into the complex biological community. That is another of the questions being addressed by the BRIDGE Programme.

Another puzzling question for biologists is, 'How do the species travel between vents?' The animal groups found at vents — for example the vent shrimp, lacking eyes but with huge sense organs in their backs — occur nowhere else. But vent fields are not permanent structures. At the fast spreading east Pacific ridge a vent field may only last for 25 years before the hot water flow at that location stops, to start somewhere else on the ridge. Atlantic fields may exist for hundreds of years but eventually the flow will stop. For species specialised to live only at these unusual locations that is rather like an oasis in the desert running dry or an island sinking. How do those species find other similar sites?

The nature of this question has changed in recent years with the discovery that vent fields may not be as rare as was first thought. Originally it was suggested that

A Russian *Mir* submersible prepares to take its three occupants to a depth of 3,500 m during a BRIDGE cruise.

Southampton University

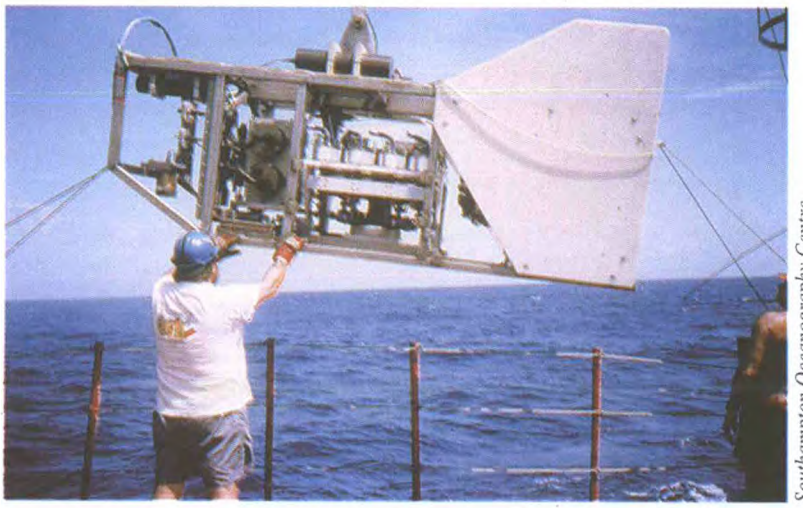


Dr David Dixon, Southampton Oceanography Centre

How do juvenile shrimp travel from one hydrothermal system to another?

Southampton University

Submarines use robot arms to collect samples from 'black-smoker' chimneys.



Southampton Oceanography Centre

BRIDGET sets off to look for smoke signals.

there would be no hydrothermal vent fields in the Atlantic as this was a slow-spreading region of the ridge (in the east Pacific new ocean floor is created three times as fast). When vent fields were found in the Atlantic it was suggested that they were uncommon and widely dispersed. Recent years have seen the discovery of increasing numbers of fields, not just in the Atlantic but around the world. Dr Chris German from Southampton Oceanography Centre, who in 1994 discovered in the Atlantic what may be the largest vent field yet known in any ocean, thinks fields may occur every 30–50 kilometres. The closer the vents occur to one another the easier it would be for the animals — or their larvae floating in the water — to move between them. Dr German found the field, which he called 'Rainbow', by towing an instrument which he developed as part of the BRIDGE Programme (the BRIDGE Towed instrument — BRIDGET) which detects the chemical signals pushed high into the water column by the vents. "We were simply looking for smoke signals", he said.

The final frontier

If the reference to smoke signals is reminiscent of a Wild West frontiersman, it may not be surprising. The pioneer mentality of today's explorers is reflected in the names given to seafloor features. Echoing the mid-west frontier towns, other newly discovered vent fields on the Atlantic ridge bear names like 'Lucky Strike', 'Broken Spur' and 'Snakepit'. Although the hazards (and costs) of deep ocean prospecting mean that the vast mineral mounds — also the focus of much BRIDGE-funded research — are unlikely to spark another Klondike, their concentrations of copper, zinc, lead and even gold and uranium are possible resources for the future. However, some mounds may be more accessible than imagined.

As the ocean floor originally spread outwards from the ridge, all ocean floor should be dotted with such mounds, and not all ocean floor remains in the ocean. Fossil hydrothermal vents have been found in the Ural Mountains in Russia, and Cyprus is a fragment of ocean floor that has been forced up into the air by the continental drift of Africa against southern Europe (which also produced the Alps). The Bronze Age was supported by copper ore mined in Cyprus (the very word 'cyprus' means 'copper'). Understanding how these mineral deposits are laid down at the mid-ocean ridge, and why they are where they are in the deep ocean, helps us understand how to find them on what has become dry land.

The deep ocean is the last great unexplored wilderness on our planet and the deep ocean does not give up its secrets easily. But as the BRIDGE Programme enters its final phase it is clear that it has been astonishingly successful. As the results come in we are on the verge of opening the Earth's final frontier for the arrival of those who would follow the explorers. As a fictional hero of deep-sea exploration once put it, "You thought I would find nothing but ooze, and I have discovered a new world." (H G Wells: *Into the Abyss*)

Of lost soles, drifting duckies and other spills of opportunity *

On May 27, 1990 the freighter *Hansa Carrier*, enroute from Korea to the U.S., encountered a severe North Pacific storm. Spilled overboard from cargo containers were 61,000 Nike shoes. The incident was nearly forgotten until a year later when a Seattle newspaper reported incredulous beachcombers along the Oregon, Washington, and Canadian coasts finding thousands of Nike shoes washing ashore. While Nike declined to take official notice of the discovery, the news attracted the attention of two oceanographers.

"We saw this as a wonderful spill of opportunity", says Curt Ebbesmeyer, an oceanographer with the consulting firm Evans-Hamilton, Inc. in Seattle, Washington. Ebbesmeyer and a colleague, James Ingraham of the National Marine Fisheries Service, reasoned if they collected enough documentation concerning the location and number of shoes found, the data could be used to hindcast the shoes' drift in much the same manner as is done with drift bottles periodically released in the mid-Pacific to track current patterns.

The oceanographers were helped considerably by media interest and by Oregon artist Steve McLeod, an avid beachcomber who traveled the coast and provided the scientists with the phone numbers of other beachcombers. Ebbesmeyer and Ingraham used only reports involving about 100 or more shoes, in time accumulating reports involving 1,600 'floaties', amounting to 2.6% of the total lost, a rate equal to the recovery rate for drift bottle drops which are usually released in groups of only 500–1,000.

Using a computer program called the Ocean Surface Current Simulations (OSCURS), the oceanographers produced a hindcast drift simulation that predicted the first shoes would reach Vancouver Island 220 days after the spill, a result that agreed quite closely with the date of the first reported sole survivors there.

As for the significant latitudinal distribution of the drifting shoes (about 300 kilometers), the oceanographers surmise that many winter-time arrivals may have been carried northward by the Davidson Current while others, arriving in the spring, encountered southerly moving currents, notably the California Current which would eventually carry surviving soles westward back across the Pacific.

Indeed, as the scientists were preparing to publish their findings in the American Geophysical Union's publication *EOS*, they received reports of Nikes being found on the north end of the Big Island of Hawaii. The news was not unexpected.

"If any shoes survive long enough they could complete an entire Pacific circulation, about five to seven years," Ebbesmeyer explains. "Right now [fall, 1995], the hot spots are the Philippines and all of Japan. And some of the shoes should be coming back to Washington and Oregon soon."

Lost Nikes are not the only drifters the oceanographers are continuing to track. In November, 1992, when hundreds of 5- to 12-cm plastic bathtub toy animals (yellow ducks, blue turtles, red beavers and green frogs) began appearing on the beaches near Sitka, Alaska, the oceanographers again went into action, publishing notices in local papers and gathering reports of about 400 recoveries along

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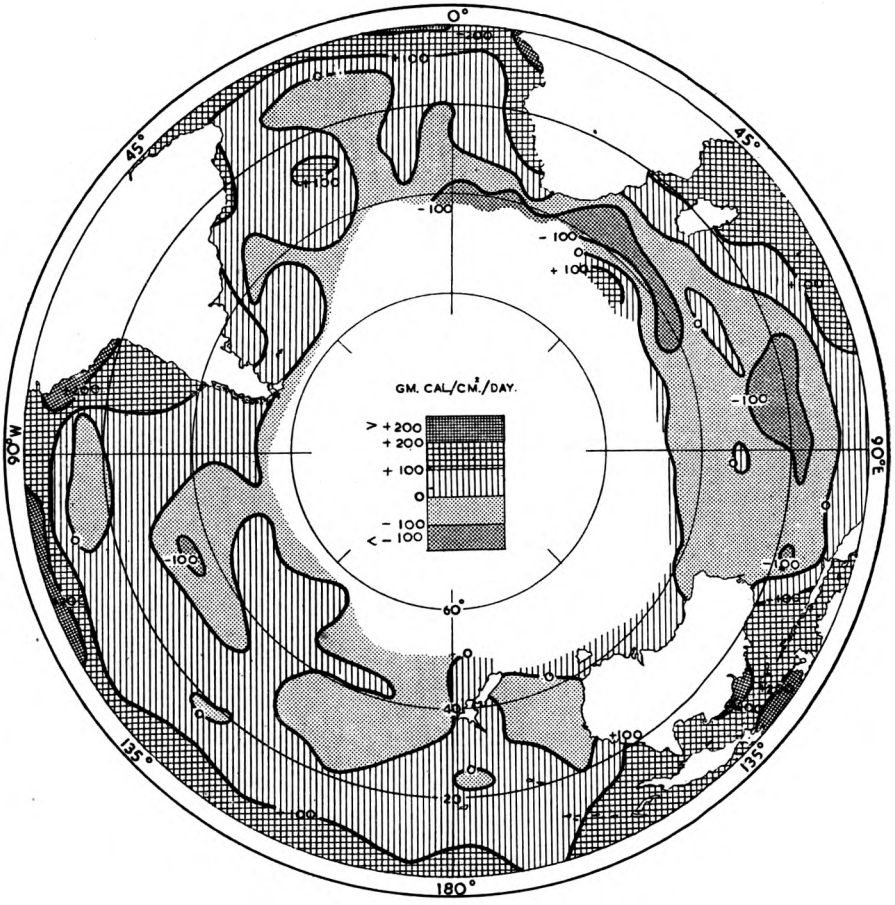

Fig. 2. ANNUAL HEAT BALANCE

(e.g. in the International Geophysical Year), for these elements are not subject to the rapid fluctuations found at or near the sea surface. Some areas of the oceans, however, are rarely traversed by any vessel, much less by selected ships, and thus many years will pass before sufficient surface meteorological data, particularly humidity observations, are available for these regions.

Acknowledgments

The author is indebted to the Director-General of the Meteorological Office for the data used in the investigation into energy exchange in the Southern Hemisphere, and to the Superintendent and staff of the Marine Division for their advice and co-operation, without which this investigation could not have been undertaken.

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century a few toys will have been transported to many locales in the Northern Hemisphere. The two scientists invite *Marine Watch* readers to contact them with reports of any future finds of Nike shoes, bathtub toys, or other interesting drifting objects.

Contact info: Curtis Ebbesmeyer, Evans-Hamilton Inc., 731 N. Northlake Way, Seattle WA 98103; James Ingraham, National Marine Fisheries Service, NOAA, 7600 Sand Point Way, NE., Seattle, WA 98115-0070.

Ball lightning event at South Morecambe gas field

On 10 March 1997 the accommodation platform AP1 situated in position 53° 50.48′ N, 03° 34.44′ W, on the South Morecambe gas field owned and operated by British Gas, experienced a wintry squall — the platform's Radio Officer, Sam Walton, takes up the story:

"On 10 March the wind had increased from W'ly, 20 knots [force 5] at 0001 UTC, to SW×W, 40 knots [force 8] at 0300 with the pressure rising from 990.1 mb to 994.6 mb in this period, and the combined wind wave and swell being 3.5–4.0 m.

"This trend continued, and the 1500 observation was W×S'ly, 40 knots with gusts to 50 knots [force 10] while the sea and swell was 4.5–5.0 m and the pressure was 999.7 mb.

"At 1540 the Captain and Mate of the standby vessel *Britannia Endeavour*, which was approximately 400 m to the south of the platform, and the Radio Operator on the accommodation platform, observed a large squall approaching the platform from the south. It began to snow and hail, the visibility decreased to 400 m and there were gusts of wind to 75 knots with a sea and swell of 6.5–7.0 m.

"At 1545 the observers saw a large ball of lightning discharged towards the drilling platform, which is located at the east end of the central complex. The sky lit up dramatically, the resulting illumination triggered off all the ultraviolet detectors on the platform, and all personnel went to their muster stations. The Captain of the *Britannia Endeavour* reported a possible lightning strike on the drilling platform as the ball appeared to go through the legs of the platform. The platform was inspected and no damage was found.

"No thunder was heard at the time. The squall passed rapidly with barometric pressure rising quickly, and at 1800 the observation was W×S'ly, 50 knots, sea and swell 6.0 m and barometric pressure 1003.4 mb."

British Gas

Offshore facilities at the South Morecambe gas field, entirely owned and operated by British Gas.

Analysis

This account was passed to the Tornado and Storm Research Organisation (TORRO) where the Archivist of the TORRO Ball Lightning Division, Mr Adrian James, kindly provided Mr Walton with a questionnaire routinely sent to those who think they may have seen such a phenomenon, and was then able to assess the subsequent additional notes. He said that although it was impossible to confirm that ball lightning was involved in this event "as interpretation must in the end be a matter of personal judgement rather than verifiable fact", he said the observations were broadly consistent with many other eye-witness reports of the phenomenon.

He continued, "The object is reported to have appeared during the early part of a squally thundery shower with rain followed by marble-sized hailstones. It was circular and emerged from a low cloud base with the luminosity of laser light, similar to that of ordinary lightning. In size it was comparable to a dustbin lid, which is towards the upper range of generally reported dimensions of ball lightning (BL). Mr Walton estimated that the object was travelling at about 100 m.p.h.; this is fast for a ball lightning, although high velocities are not unknown; perhaps the very windy conditions at the time contributed to this.

"Commonly, BLs appear directly after a lightning flash but this does not seem to have been the case on this occasion. Consequently there would seem to be no possibility that incandescent material originated from a lightning strike to a solid object. I have one caveat; the object was seen at a distance of 700–800 m from the observer, and at such a distance the accuracy of observation is likely to be compromised. But the description of the object, and the circumstances of its appearance, suggest that it may be plausibly identified with ball lightning."

What is ball lightning?

Ball lightning is a luminous, globular mass whose diameter is usually in the range of 1–40 cm and whose lifetime is usually 1–20 seconds. About 90 per cent of BL observations are made during thunderstorms, although on occasions it has been reported in fair-weather conditions. Unlike conventional linear lightning, it is relatively long-lived and can float through the air.

It is often formed after an initial flash of lightning, at or near the point of impact of the lightning flash but may also appear from the bottom of a cloud, or floating freely in the air, or attached to some object. It has been reported in entirely closed rooms, while about 10 per cent of cases refer to BL being seen within or outside aircraft at high altitude.

Most BL observations are spherical or oval in shape, 10–40 cm in diameter, but there are also relatively rare accounts of teardrop or rod shapes. Sometimes it seems to have an internal structure, e.g. a solid appearance with a dull reflecting surface or a solid core within a translucent envelope; a rotating structure suggesting internal motion or stress; a structure with a burning appearance. Typically, the description is of a red, glowing BL, or hollow BL surrounded by a blue contrasting area and a vague border which floats freely in the air.

Sometimes it is reported to bounce like a balloon against a solid surface while about a quarter of reports mention sounds such as hissing, buzzing or fluttering, and a similar proportion describe acrid smells as of burning sulphur or oxides of nitrogen.

BL sometimes appears to be guided by metallic conductors, although luminous phenomena which remain in contact with wires or metallic conductors throughout their duration are better described as corona discharges (St Elmo's fire).

Traces of damage occur in about 40 per cent of instances although in many cases these can be attributed to the effects of ordinary lightning. There are two modes of decay; silent (70 per cent) or explosive (30 per cent). BL formed in a closed space most often decays explosively but usually with a lack of damage to the room or its contents.

Ball lightning has been a matter of scientific controversy for over 200 years. Its existence has been questioned, and its behaviour continues to present a significant challenge for physical theory.

Acknowledgements

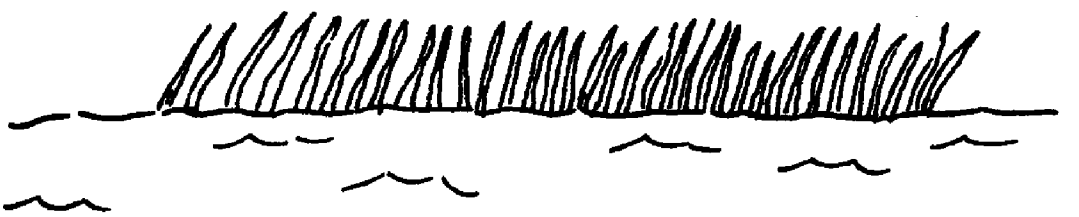
Our thanks to Mr Walton, also to Captain N. Blowers and First Mate S. Mitchell on board the *Britannia Endeavour*, for providing the details of the event, and to the TORRO Ball Lightning Division for their analysis and for the use of *Information Leaflet No.11* in the compilation of this item.

Oarfish sighting

The following account was received from Miss Muriel E. Arnold, latterly the Social Secretary on the *Queen Elizabeth 2*, but on this occasion working on board a Polish cargo ship *Lublin II*, on passage from Paita (Peru) to Balboa. In her diary for Saturday 12 April 1997, she wrote:

"Cloudy, blustery morning but lovely on deck. Went to see Captain 8.15 a.m. to ask for Agent's address in Lorient. He is still waiting for confirmation of destination port from Gdynia and does not have details of Agent yet. Reading on deck and at just after 10 a.m. I saw a long, dark ridge in the ocean about a third away from the ship, two-thirds away from the horizon, starboard side. I looked

through binoculars and couldn't understand what it was. At first I thought it was a row of birds but they were spiky and must have been attached to something in the water with their feet in the air, then whatever it was disappeared and I couldn't see a bird anywhere. This is what it looked like.



"Latitude N 5° 18.574, W 80° 06.897."

When we wrote to Miss Arnold about her sighting, she was able to recall further details, and said, "I estimate the long, dark ridge extended to about twenty feet, the spikes were dark-brown and shiny and were about two feet 'tall' out of the water. They were wafting in the wind, not at all rigid. My binoculars are Zeiss 8 × 20."

Both parts of the sighting were sent to Dr Frank Evans, of the Dove Marine Laboratory, for his consideration and, with his permission, the following comments are taken from his reply to Miss Arnold:

"The type of observation you noted has been repeated on a number of earlier occasions. It is a classic 'sea serpent' sighting. A very good treatment of this phenomenon is to be found in R.T. Gould's historic book *The Case for the Sea Serpent* (Phillip Alan, 1930, reprinted by Singing Tree Press, 1969). Gould devised a table of possible identities for sightings that could be classified as of sea serpents. Some identities, such as giant squid and floating tree trunks would not fit your description and others, such as ichthyosaurs, are wildly improbable. I further smilingly reject in your case his headings, 'deliberate deception' and 'collective hallucination.'

There remain the possibilities of single animals or creatures swimming in line. From your account the latter is less likely, your drawing shows too many spikes too close together for dolphins or killer whales and you yourself say they were not birds.

"Among single animals that might be mistaken for sea serpents Gould lists various whales, basking sharks, tuna, sea-elephants, giant squid, manatees, sea snakes and oarfish, *Regalicus glesne* (Gould mistakenly says ribbon-fish, a smaller type). Almost all can be rejected as lacking the sort of structure such as a dorsal fin that would fit your drawing. Only the oarfish has this. In the Pacific this fish is known from California to Chile and grows to a length of 11 m. There is, though, a second possibility, one which Gould also considers. It may have been an undescribed giant eel. Some fairly large eels are known; the conger, at 3 m is an example, but there exist in museums specimens of eel leptocephali (the flattened juvenile form adopted by all eels) of great size. Some leptocephali are over a metre long rather than the few centimetres of the common eel. Perhaps these juveniles are the precursors of giant eels of the deep sea. Eels have long-based dorsal fins as in your description although it can be objected that the fin rays are proportionately short and do not well match your observation.

"While there can be no certainty, for myself I would put my money on an oarfish. The oarfish is an obscure fish of which we have no more than a few dozen records worldwide. However, under the title 'The Oarfish: Sea Serpent remains Mystery of Science', there is a most informative summary of our knowledge of this animal in *The Marine Observer* (July 1994). The accompanying sketch shows dorsal fin rays which might just fit your drawing if the fish were big enough. The fact that the rays are seen to be red at close quarters may be discounted; colours at the distance you suggested can be deceptive. It is a mid-water fish of temperate and tropical seas, feeding mostly on crustacea. Adults are rarely caught in their natural habitat, being mostly found stranded.

"And so, perhaps, and with heavy emphasis on that word, an oarfish is the correct identification."

Postscript

Miss Arnold had originally contacted the Southampton Oceanography Centre about her sighting, and subsequently notified them of Dr Evans' findings. We have since heard from her that she was invited to the Centre to view some amateur footage of an oarfish taken on the west coast of the United States whereupon she was delighted to recognize dorsal 'spikes' wafting in the water, similar to those she had seen in April.

Aurora notes April to June 1997

By R.J. Livesey

(Director of the Aurora Section of the British Astronomical Association)

As of November 1997 no observations of the aurora made by mariners have so far reached me for the current year. Sunspot minimum was in 1996, and the new solar cycle has been very slow to develop, with few sunspots about. Both auroral and magnetic observers have been commenting upon the general quietness of terrestrial activity in mid-latitudes of the Northern Hemisphere although there have been the usual displays of aurora in the polar auroral zone as indicated by observations from land observers in Alaska and Iceland. In United Kingdom waters there were only nine days in 1996 when geophysically significant auroral and magnetic activity was observed. In 1997, things are beginning to become more active, particularly in the latter half of the year, and I would hope that some mariners have been able to observe the more recent spectacular displays which have been visible from Scotland.

Reviewing the current period, there was a significant active aurora on the night of 10/11 April, which was visible well down into England. Although not spectacular in the UK, all-sky activity was noted by United States observers. The maximum elevation at the port of Leith was about 25 degrees in altitude. This aurora was due to a blow-out of a cloud of particles from the sun, called a coronal mass ejection, which was directed towards the Earth. There was further activity on the night of 11/12 April, and there were further nights of magnetic activity but not generating much in the way of significant displays.

In mid-latitudes when magnetic conditions are quiet, auroral events may take the form of a glow or a quiet arc very low on the horizon. If not very bright, these may be missed completely by casual observers; they may not be visible even to experienced auroral observers owing to cloud and haze on the horizon. Of some 22 auroral event nights observed from the UK between January and August in 1997, 12 of these comprised only glows or quiet arcs without rays or activity, often observed by a solitary skilled amateur astronomer searching for auroral light. In 1996, there were some 30 auroral event nights of which 14 related to quiet glows or arcs.

The year 1997, on the other hand, has been a good one for the observation of noctilucent clouds (NLC) although tropospheric weather has frustrated observers in certain locations. NLC were visible in north-west Europe on five nights in May, 24 nights in June, 23 nights in July and two in August. Observations have been received so far from Norway, Sweden, Denmark, Poland, Austria, The Netherlands and the UK. NLC were visible from the latitude of the English Channel ports on 25/26 and 28/29 June, and 6/7 July. They were also reported to be up overhead or south of the zenith by observers on Fair Isle, Orkney and Scotland on 27/28 May, 4/5, 9/10 and 15/16 June, being all-sky at one time on the latter date above the Firth of Clyde.

Assuming that the number of nights per annum on which NLC were observed is an index of their activity, then the figures in Table 1 give an indication of variations in that activity since 1983.

Table 1 — Annual frequency of NLC event nights in north-west Europe as reported

YEAR	1983	84	85	86	87	88	89	90	91	92	93	94	95	96	97
FREQUENCY	29	45	48	50	38	56	46	32	27	16	27	45	58	53	54

There is the suggestion, in long-term records since the turn of the century, that the frequency of NLC is modulated in some way by the sunspot cycle and also by the amount of volcanic dust in the atmosphere that affects the radiation balance and high atmospheric temperatures. There is a great deal yet to learn about NLC themselves, while their movements and behaviour can give clues to the weather patterns at 83 km above the Earth's surface. Observations are therefore of considerable interest to researchers, and mariners are strongly requested to observe and report upon these phenomena whenever they are encountered.

Letters to the Editor

Abnormal propagation

Ponta da Madeira to Singapore, in position 28° 25′ S, 00° 08′ W. During the evening of 1 October 1997, between 2000 and 2230 UTC, television reception from the South African Broadcasting Company was observed at a distance of approximately 1,000 n mile from the Cape of Good Hope.

The TV, which was in stand-by-mode on the video channel, began to receive intermittent transmissions (pictures and voice) followed by full and clear reception.

Programming at that particular time included 'Sports Night' and coverage of the Manchester United-v-Juventus European Champions fixture which, for a 'United' supporter, was compelling viewing.

Prevailing conditions were as follows: air temperature 20.0°, wet bulb 18.6°, pressure 1019.0 mb. The general situation was high pressure centred to the south of the Cape of Good Hope, with a ridge extending north-west.

Captain I. Beetham, Master of *Matilde* (Souter Shipping Ltd).

Suez sandstorm

Enclosed is a photograph [see front cover] of a severe sandstorm experienced whilst serving aboard the Natural Environment Research Council vessel R.R.S. *Charles Darwin*. The storm was subsequently reported on the BBC World Service as, "Egypt's worst for 30 years". I think you will agree it is quite dramatic. Everyone who witnessed it was awestruck and it remains a talking point. The following are the details:

Observers: Ian McGill, Chief Engineer. Richard Bourne, Master. Ship's company.
Date: Friday 2 May 1997.
Time: Start 1700 LMT (1500 UTC). Finish 1830 LMT (1630 UTC).
Position: At anchor off the port of Suez in Suez Bay, awaiting a northbound transit through the Suez Canal.

Before sandstorm.	Clear visibility (98). Wind 190° × 15–20 knots.
At 1415 UTC	Pressure 1017.1 mb (corrected), falling slowly. Air temperature 25.3°, wet bulb 17.8°, sea 20.9°.
1420–1450	A heavy rain squall was experienced where the wind strength increased to gusts of 30–40 knots.
1450–1500	Rain stopped and it was then we realized that it heralded, as shown in the photograph, an amazing rolling meteorological feature that few Europeans have the honour to witness, namely a severe sandstorm.
During sandstorm:	
1500–1630	During the storm the visibility, as one would expect, was severely restricted.
After sandstorm:	
1700	Visibility 200–400 m to poor. Wind N'ly, 12–15 knots. Pressure 1009.7 mb, rising steadily. Air temperature 24.7°, wet bulb 17.8°, sea 20.4°.

I hope the photograph conveys the excitement and anticipation that we had just before the sandstorm hit us.

Mr I. McGill, Chief Engineer, R.R.S. *Charles Darwin* (Natural Environment Research Council).

Comet Hale-Bopp

Many thanks for the copies of pages from ships' observation logs relating to comet Hale-Bopp. Although most of the observations are fairly elementary, taken together they reveal two very interesting facts: a) most observers had not heard of the comet when they first sighted it, and b) the comet was only observed when it was brighter than the equivalent of a second magnitude star. Two ships (*Chiquita Schweiz* and *Taunton*) produced scientifically useful observations, and a third (*Norna*) an accurate sketch of the comet's appearance.

I observed comet Halley from on board R.R.S. *Bransfield* in 1986, so I knew that a comet had to be relatively bright to be widely noted by marine observers not familiar with comets, but had not appreciated just how bright. The ships' observations of Hale-Bopp have enabled me to quantify the required brightness and this will be very useful in helping to interpret historical observations. I was surprised how few of the ships' observers had heard of the comet before they saw it, but it seems that scientists still have a long way to go to reach a wider audience.

Jonathan Shanklin, Director of the Comet Section, British Astronomical Association.

Editor's note: In the January 1998 edition of this journal, we published the names of ships reporting sightings of the comet and also some additional comments which were sourced from media reports available at the time.

Mr Shanklin has provided the following additional information:

A comet is thought to be a rather fragile rubble pile of building blocks left over from the birth of our solar system and held in cold storage in its outer reaches ever since. The fragments range in size from sand grains, upwards through pebbles and boulders to mountain-sized lumps. The composition of the fragments is varied and includes water, carbon dioxide and methane in the form of ices, and rocky material. Perturbed from its deep freeze by a passing star, the comet approaches the sun, the ices evaporate and the comet nucleus grows first a coma making it appear like a fuzzy ball, and then a tail.

Comet Hale-Bopp was discovered by accident by Americans Alan Hale and Thomas Bopp, in July 1995, when it was over seven times the Earth's distance from the sun. This is a much more distant discovery than that of the average comet and immediately suggested that it was a very large one. Space Telescope measurements put an upper limit of around 40 km on the size of the nucleus, bigger than comet Halley, but tiny in celestial terms. Sadly, it never got really close to the Earth; if it had arrived just six months later it would have lit up the night sky like a quarter moon.

The comet is one of the intrinsically brightest comets of the past 500 years and this has enabled scientists to make many new discoveries. Interesting chemicals found in it include hydrogen sulphide ('bad eggs'), methanol, formaldehyde, cyanide, acetylene, ammonia and ethane. Although two tails could be seen to the eye, a third one was discovered shining with the light of sodium; this is the first time such a tail has ever been seen. The brightest tail, which was curved, was composed of dust and shone by reflected sunlight. The other, much straighter and usually fainter, glowed because its gases absorb ultraviolet light from the sun and re-emit the energy as blue light. This tail points directly away from the sun, blown

in that direction by a fierce wind from the sun, moving at speeds of over 100 km per second. The nucleus rotates once every 11.5 hours and, as the surface warms up, the ices start to evaporate; emission starts at local noon, peaks in the afternoon and then declines. Since its discovery, it has lost several metres of material from its surface but there is more than enough left to last the comet another million years. When it last visited the vicinity of the Earth, the pyramids were under construction; the next visit will be in 2,380 years time — I wonder what it will see then?

Book reviews

Collisions and their Causes, Second Edition (1997) by Captain Richard A. Cahill. 215 mm × 280 mm, vi+262 pp including appendices and index, *illus.* ISBN 0 9630018-7-6(hbk). First published by Fairplay Publishing, London (1983); Second Edition published by Nautical Books 1122 Colorado Suite 1508 Austin TX 78701. Price: $59.95 US, cheque or credit card (Visa or M.C.) E-mail: racahill@ix.netcom.com

First published in 1983, this second edition of Captain Cahill's incomparable book introduces not only many new collision cases to be placed under his experienced eye, but much that is new in his experienced advice on how to avoid such marine disasters. Unfortunately the author finds that collisions continue to occur much as they always have done, but perhaps for some different reasons.

After the preliminaries of contents, foreword, preface and author's notes, one finds 19 chapters, several appendices, references and indexes, detailing about 84 collision incidents, from the *Stockholm/Andrea Doria* tragedy of 1956, right up to the *British Trent/Western Winner* collision off the River Scheldt in 1993. Also included are episodes dealing with multiple collisions, or incidents involving more than two vessels.

Almost all possible headings of collision types are included, from crossing, meeting, overtaking and converging situations, to casualties caused in channels, by interaction, getting underway, at anchor and with tows. Each and every report is accompanied by easily understood figures showing the positions and courses leading up to the point of contact. Under the final chapter heading of 'Keeping a proper lookout' we have the poignant reminder that even most experienced seafarers can be at risk, with the loss of nine lives of officers and crew occurring in the *British Trent* collision, explosion and fire, whilst in the pilot grounds off Belgium.

The author, in addition to giving detailed accounts of many collisions, has added his own comments relating to causes and avoidance of particular casualties and on general aspects of collision avoidance. Readers may not agree with all that is said, but whether readers attempt to browse right through the book, or read individual accounts, the comments must give valid insight into the reasons for the continuing frequent occurrence of collisions at sea.

In conclusion, Captain Cahill deplores the deterioration of watchkeeping standards allied to the now almost universal practice of adopting a 'bare bones' philosophy in ship manning. Despite the introduction of ARPA, VHF and GPS, if these technological aids are not competently employed, collisions must continue to

occur all too often. Finally, the keeping of an efficient watch with a proper lookout by all the means available and in accordance with the Collision Regulations, are the main means of avoiding danger and the risk of collision.

As we said in 1985 in our review of the first edition of this invaluable book, it should help to increase the understanding of circumstances which can lead to collisions, and will continue to make a valuable contribution to safety at sea.

Captain J.F.T. Houghton

Managing Safety and Quality in Shipping. The key to success by A.-M. Chauvel. 150 mm × 208 mm, x+214 pp, *illus*. ISBN 1 870077 407. Published by The Nautical Institute 202 Lambeth Road London SE1 7LQ. Price: £23.00 (Non-members), £16.00 (Members) plus postage.

Managing Safety and Quality in Shipping begins with two forewords, both worthy introductions as they are related to safety; however I soon had to decide what the targeted readership was. The opening chapter defines all bodies and conventions relating to the marine environment, so far so good, but in Part 2 of the book it is quite clear that senior management ashore is the intended readership (perhaps the author is not a mariner) although I feel sure that many shore staff would already recognise the concepts being put forward. Other areas of the book would be useful to both seagoing and shore staff, although all but the inexperienced would perhaps find the reading rather patronizing. The book would be better aimed at educational establishments training Cadets.

The publication is well laid out and fairly easy to follow, generally using bullet points to good effect throughout. There is the feeling though that the text is preaching to the converted — nothing annoys as much as being told to do something you are already doing, and, with reference to safety, the existence of a fairly boisterous Marine Safety Agency means that all ships visiting the UK are complying with all relevant Statutory Instruments. The mariner has been plying his trade for decades and has modern technology to assist him, he has no need to be told that his environment is hazardous.

Generally, there is a complete lack of reference to any marine Statutory Instruments, almost as if they did not exist, and no cross-references within the book even when it would help the reader, and I feel that the annexes should have been incorporated into the text rather than added like an afterthought at the end of the book.

The assumption made that someone with no experience would be allowed to go out and lower a derrick is ludicrous; this sort of nonsense does not happen, and if it did, the papers would be so full of marine accidents that a book like this may then be of use at sea, but until then ...

Captain A.P. Maytham
Port Met. Officer (Bristol Channel)

Personalities

RETIREMENT — CAPTAIN A.W. KINGHORN retired in August 1997 after a varied career spanning 46 years.

Alexander William Kinghorn was born in North Shields in 1933. His family has strong maritime connections as both his father and grandfather had worked respectively as an engineering design draughtsman and a marine engineer, while previous Alexander Kinghorns had sailed in sailing ships including those of the Ben Line.

He was educated at King Edward's School in North Shields, followed by Tynemouth High School and then the training ship H.M.S. *Conway*. He joined Blue Star Line as a Cadet in 1951; both H.M.S. *Conway* and most Blue Star ships encouraged the making of meteorological observations and Captain Kinghorn says he "received a good grounding in this fascinating subject". His name first appeared in a meteorological logbook in 1954 when he was Fourth Mate on the *Saxon Star*. In that year he passed for Second Mate after a 12-week course at Nellists' Nautical School in Newcastle and was promptly seconded to the associated Booth Line who had asked Blue Star for the loan of a Second Mate. He says, "Six months to the West Indies and Brazil, up the Amazon to Manaos, to New York and Newport News then back to Brazil where we loaded for home was a great experience". Back in the larger and more sophisticated Blue Star ships, he reverted to Third Mate, passing for First Mate in 1957, and for Master in 1960. After two years as Second Mate in the *Sydney Star*, he was promoted Chief Officer on the *Dunedin Star* in 1960. A spell of non-observing work followed but he returned to refrigerated ships once again in 1967, as Mate on the *California Star*, then on the *English*, and *Wellington* 'Stars' until promotion to Master in 1971, his first command being *English Star* from Tilbury to New Zealand where he then took command of *Caledonia Star*, then approaching her thirtieth birthday and spending her last years on the New Zealand to Japan service — "A good apprenticeship for a new captain!" After taking her to scrap in Kaohsiung, he moved on to other Blue Star ships including *Tasmania Star* and *Adelaide Star* (ending in another scrap run to Masan in South Korea, in 1975). A spell in container ships came next, culminating with standing-by the completion of the *New Zealand Star* on the Tees, taking her away on the new New Zealand–Australia–Persian Gulf run which Blue Star Line were inaugurating.

Shortly after the Falklands Conflict, he was appointed to the *Avelona Star*, acting as a garrison ration supply ship to H.M. Forces based in Port Stanley. Her Majesty's last troopship, *Keren*, came next during 1984 and 1985, as Blue Star had won the operating management for the Ministry of Defence. Captain Kinghorn recalls that, "Running a regular ferry service between Ascension Island and the Falklands provided plenty of meteorological experience, South Atlantic style, with an interesting incursion beyond the Antarctic Convergence Barrier to South Georgia in the depths of a southern winter as a finale". He again reverted to reefer ships until March 1988 when he was retired from Blue Star after 37 years.

For the last years of his career, he joined a Singapore-Chinese family concern carrying breakbulk and bulk cargoes between the Far East, Karachi, Indonesia and the Philippines. He and his wife were frequently the only 'Brits' on board, and he tried to interest the multi-national crew with meteorology, with growing success until, in 1994, the *Golden Harvest* became an official observing ship serviced by the Port Meteorological Supervisor at Singapore. Such was the enthusiasm he

generated among his officers, that even after the ship was sold, they continued to make their own observations, transmitting them to Hong Kong as requested, particularly during the typhoon season. He says, "The importance of plotting typhoons — and avoiding them — was impressed upon us when we found that some other ships, less interested perhaps, were foundering in the bad weather ..."

Captain Kinghorn signs off by saying, "I count my blessings that I have never been shipwrecked, had a serious fire at sea, lost anyone overboard or come into collision (all the usual shipmaster's nightmares!) and am convinced that my early training in observing the weather has helped 'Lady Luck' to keep me on a safe course."

We take this opportunity to wish him continued association with Lady Luck and extend our thanks for all his observing services.

RETIREMENT — CAPTAIN B. LUKE retired in October 1997 after a career covering 41 years.

Brian Luke was born in November 1940 at St Asaph in what was then Flintshire in north Wales. He entered the Merchant Navy on 15 December 1956 as a Cadet with the Moss Hutchison Line Ltd, at the age of 16½, and was Third Officer from July 1960 and Second Officer from March 1962. In March 1967 he was promoted Chief Officer after having gained his Masters Certificate. During this period of his career he served on the *Memphis*, *Kantara*, *Assiout*, *Amarna*, *Karnak* and *Kypros*, and Captain Luke says he is quite sure that some of the ships he served on were observing ships, if not for The Met. Office, then certainly for the Israeli Meteorological Service which, at that time, had an office located within the Haifa port area.

As Chief Officer, he served on the *Assiout*, *Kypros*, *Tabor* and *Makaria*, the latter ship being the first from which The Met. Office received observations by Captain Luke, in 1974. The Moss Hutchison Line became integrated within the P&O General Cargo Division in 1972 and later, during 1976 and 1977 he sailed on *Vosges* and *Vendee*.

He transferred to P&O Ferries Ltd in 1977, as Chief Officer, and had brief spells of duty on both the Irish Sea and Channel services before joining the *Elk* whilst building in South Korea, in December of the same year. *Elk* commenced the Scandinavian service for P&O Ferrymasters in February 1978, and in 1979 Captain Luke was promoted Master on that ship, later commanding the *Buffalo* (operating on a Tor Line charter between Gothenburg and Amsterdam) for a short while before returning to *Elk* in January 1980. The rest of Captain Luke's career was spent in command of the *Elk*, and his name appeared on 35 meteorological logbooks from that ship up to 1997 and retirement. He received an Excellent Award in 1987 and 1989.

Captain Luke says, "In maintaining a tight schedule across the North Sea with a ro-ro vessel, especially during winter periods (two complete round voyages per week between the Tees and Gothenburg/Helsingborg being the requirement), and also to prevent cargo damage or loss, weather forecasting obviously has, in my case, been one of the more important factors that I have taken into consideration in both passage planning and pilotage. Forecasting has naturally been at the forefront with regard to providing ETAs together with the ordering of labour in advance for the next port or ports of call — accurate ETAs being occasionally required as much as four days in advance for Swedish ports of call during extended holiday

periods in an attempt to avoid costly waiting periods for labour. Forecasts are also crucial when deciding upon the level of on board cargo and trailer securing to be undertaken for a North Sea crossing (passages have, on occasion, extended from the normal 28 hours or so to as much as three days during prolonged episodes of adverse weather within the North Sea), and in deciding whether or not to accept for shipment hazardous loads, marine pollutants or heavy lifts on trailers or low loaders. I have always made it a point of collecting and having at hand as much information as possible, from a variety of sources, on current and expected conditions during periods of unsettled weather.

"Established practise has always been to record and then display every shipping forecast — four daily —for the North Sea area and adjacent waters, issued by The Met. Office, and broadcast via the BBC. Although available on Navtex morning and evening, the aforementioned method enabled the forecast to be obtained somewhat earlier, and often precluded the possibility of non receipt due to poor Navtex reception from UK stations, especially when within the Kattegat.

"In conclusion, over the years The Met. Office has provided both myself and, I am sure, countless other seafarers, a very much needed and necessary service, which is greatly respected. I therefore extend my sincere thanks and appreciation for the information in terms of forecasts which I have received and acted upon, and which no doubt has contributed greatly to the safety and therefore the success of the service in which I have been employed."

In our turn, we would like to thank Captain Luke for his kind remarks and send our best wishes to him for a long and restful retirement.

RETIREMENT — CAPTAIN J.W. WELCH retired in November 1997 after 39 years at sea.

Joe Welch was born on Christmas Day in 1940 and spent his early years on the south coast "messing about with small boats in Poole Harbour", his family having no previous connections with the sea. He was educated at Exeter School, Exeter and then attended Warsash after which he was accepted as a Cadet by P&O Steam Navigation Company in early 1959. He served on several P&O cargo vessels, Trident Tankers' *Majola* and some of the great old ships, such as *Stratheden*, *Iberia*, *Oriana* and *Canberra*. He obtained his Masters ticket in 1968 and, in addition, served several years with the Royal Naval Reserve (List 1) up to the rank of Lieutenant Commander, on a variety of warships.

In the late 1960s, the concept of carrying cargo in a container seemed a good idea that might catch on! So Captain Welch joined OCL's Ocean Fleets Ltd when volunteers were called for, and sailed on the maiden voyage of one of the first ever container ships *Moreton Bay*, in 1969, on the Australian trade. His first command was *Jervis Bay*, in 1977, and he was in command of *Mairangi Bay* which was the first container vessel to round Cape Horn. He retired from P&O Nedlloyd's *Peninsular Bay*.

Captain Welch is happily married with three grown-up daughters and lives in the Cotswolds, near Witney. His retirement interests include a recently-purchased canal narrowboat named *Last Command*, moored on the Oxford Canal. The boat will be used for fishing and exploring the 2,000 miles of England's inland waterways. Captain Welch may also consider joining in with a band of volunteers actively attempting to restore the Thames/Severn Canal. He says he is now quite

happy to retire after over 20 years in command and a fascinating sea-going career of great variety and tremendous change in just one person's working lifetime.

Captain Welch's name appears in 61 meteorological logbooks covering his observing career from its beginning, in 1962, to 1997, 23 of which were assessed as Excellent, and he received nine Excellent Awards between 1982 and 1993.

We would like to take this opportunity to thank Captain Welch for all his observing work, and wish him a long and happy retirement.

Notices to Marine Observers

The Shipping Forecast — BBC Radio 4

With effect from 6 April 1998, broadcasts of the Shipping Forecast on BBC Radio 4 will be at the following clock times:

0048 0535 1200 1755

The broadcasts timed for 1200 and 1755 will be on Long Wave only (on the existing frequency), and will omit coastal station reports.

The Marine Observer — January 1997

As readers will have noted from page 51 of this edition, distribution of *The Marine Observer* is now carried out from our own offices but approximately 250 copies of the January 1997 edition of the journal were unexpectedly delivered to us from the former distribution point. The quantity indicates that a significant number of regular recipients obviously did not receive their copies as usual but we are unable to confirm their identities because, sadly, the method of distribution employed in January was beyond our control.

Whilst apologizing for this unfortunate oversight, we would ask anyone who missed but still requires their copy of the January 1997 edition, to contact us so that the copies can be despatched.

Excellent Awards 1996

Approximately 83 nominees for the 1996 round of Excellent Awards have yet to claim their award books, perhaps still unaware that they have been named for such in the lists on pages 152–157 of the October 1997 edition of *The Marine Observer.* To find out if you are among them, please refer to that edition of the journal, and afterwards contact us direct at the address below, or through any UK Port Met. Officer if your name appears in those lists and you have not already been contacted by letter or received your award.

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